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Higher Education
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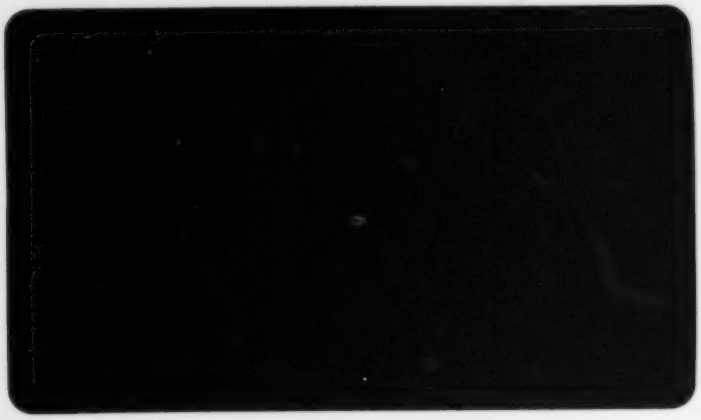

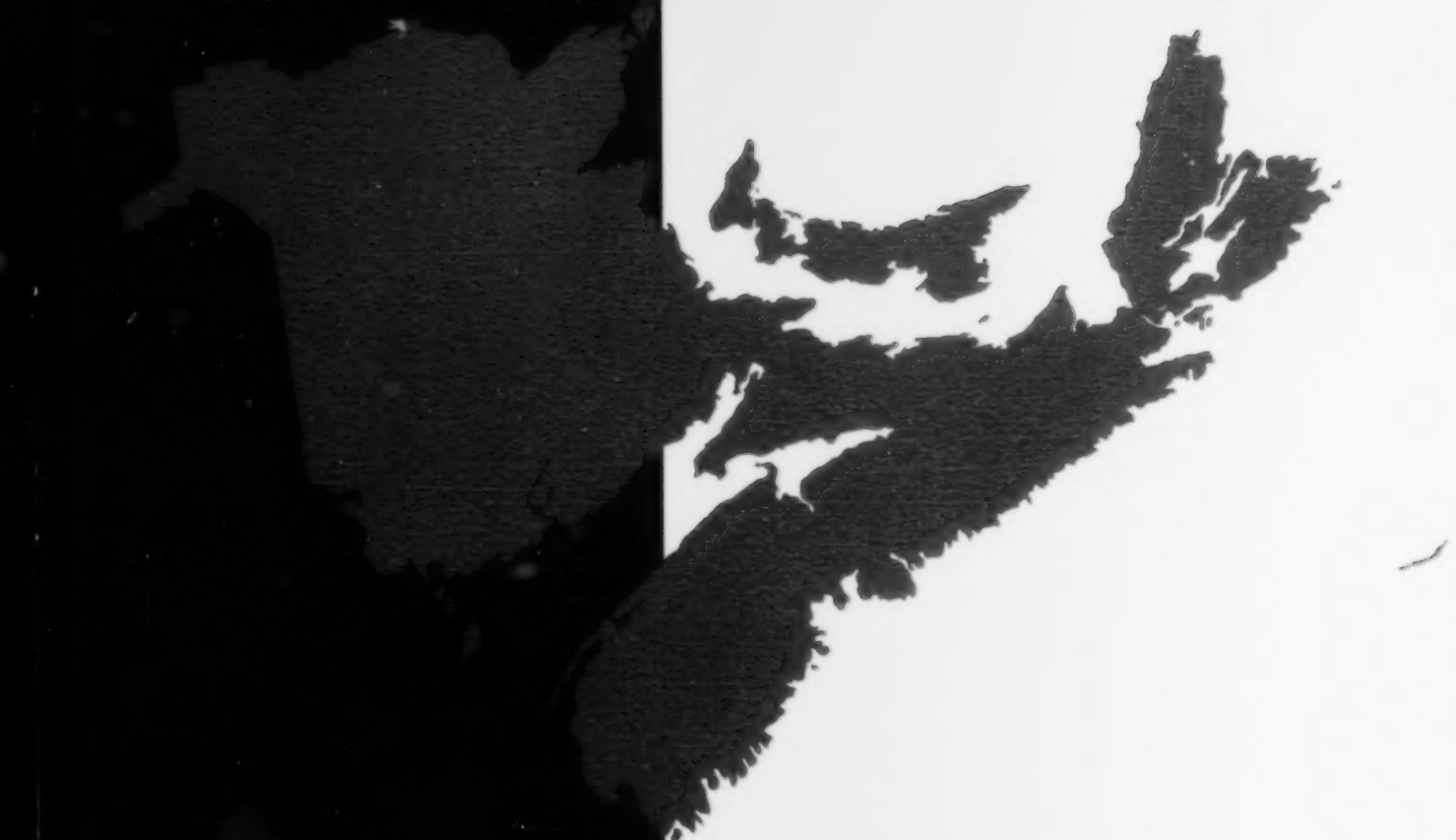

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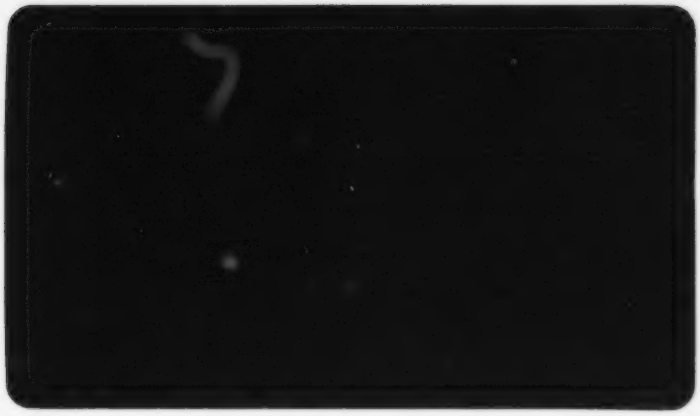

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Two Years On:
A Survey of Class 2003
Maritime University Graduates

May 2007

Additional copies of this report may be obtained from:

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For a view of the MPHEC and its activities, please visit its web site at: http://www.mphec.ca

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The AAU-MPHEC Advisory Committee on Information and Analysis and MPHEC staff prepared the report.

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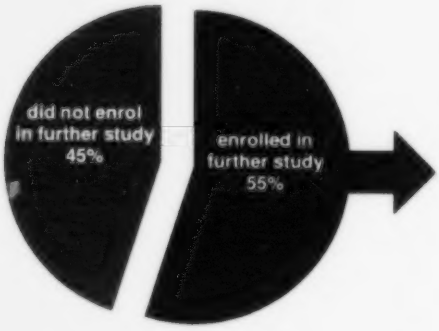
EXECUTIVE SUMMARY

In 2003, over 13,000 students (the Class of 2003) graduated from Maritime universities. In 2005, the Maritime Provinces Higher Education Commission in partnership with the governments of New Brunswick, Nova Scotia and Prince Edward Island contacted a representative group of these graduates to gain an understanding of what they do after completing their degree, and the factors that influence these educational and career paths. The survey also provides valuable information on who the graduates are and on their university experience, as well as on their financial status two years after graduation when their employment earnings and student loan repayments are taken into consideration.

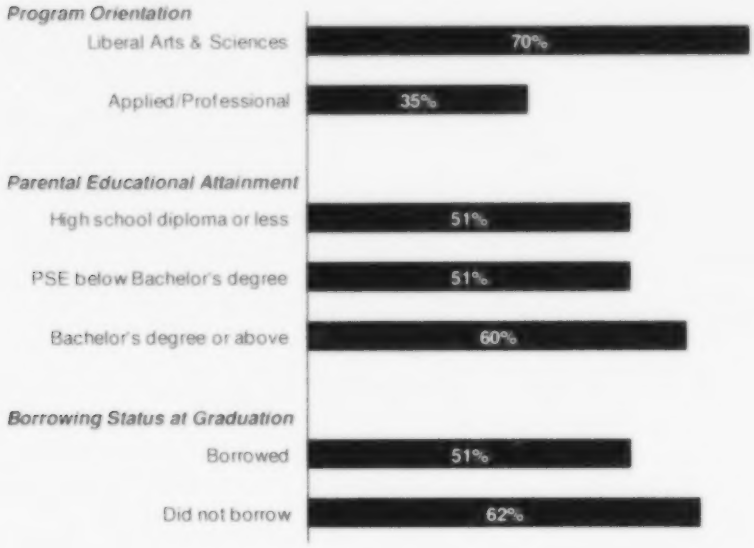
There are six major findings for the Class of 2003; these findings are summarized below.

Half of All Graduates Chose to Pursue Further Study

- 55% of first-degree holders (45% of all graduates) chose to further their studies
- First-degree holders were most likely to enrol in either a Bachelor of Education program or a graduate-level degree
- Graduating from a Liberal Arts & Sciences program, having parents whose highest level of education is a Bachelor's degree or above, and not borrowing for the 2003 degree, all increase the likelihood of a graduate pursuing further study



Proportion of first-degree holders who pursued further study

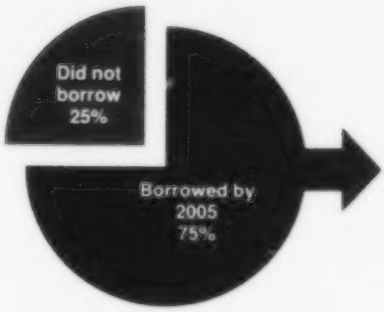


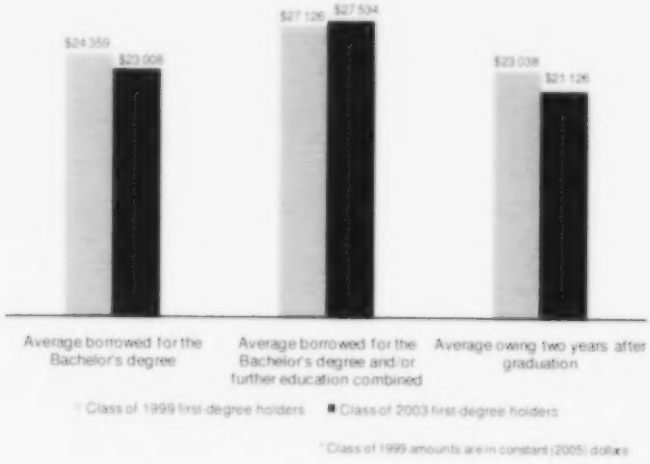
Maritime University Graduates Have Made A Successful Transition into the Labour Market

- *Employment rate*
  - 95% First-degree holders
  - 96% All Class of 2003 graduates (93% Canadian labour force)
- *Employed Full-Time*
  - 81% Employed first-degree holders
  - 85% All employed graduates (82% employed Canadians)
- *Average Annual Earnings*
  - $34,853 Employed first-degree holders
  - $39,212 All employed graduates ($37,865 employed Canadians)
- These findings represent a significant achievement, since most graduates have only just entered the labour market (70% of first-degree holders were 25 years of age or under) and will improve their performance over time.

The Majority of Graduates Borrowed for their Education

- 65% of first-degree holders (60% of all graduates) borrowed for their 2003 degree
- The average amount borrowed was $23,000
- By 2005, 75% of first-degree holders borrowed, and the average debt reached $27,500
- These findings are comparable with those for the Class of 1999




$24,359
$23,008
$27,126
$27,534
$23,038
$21,126
Average borrowed for the Bachelor's degree
Average borrowed for the Bachelor's degree and/or further education combined
Average owing two years after graduation
Class of 1999 first-degree holders
Class of 2003 first-degree holders
* Class of 1999 amounts are in constant (2005) dollars

Many Graduates Accumulated Substantial Debt & Reported Experiencing Difficulty with Repayment

- *Borrowed $30,000 or more by graduation*
  - 36% First-degree holders
  - 33% All Class of 2003 borrowers
- *Borrowed $30,000 or more by 2005*
  - 44% First-degree holders
  - 39% All Class of 2003 borrowers
- *Among first-degree holders in repayment...*
  - 33% had difficulty making their student loan payments
  - 54% devoted more than eight percent of their income to student loan repayment; using other benchmarks of manageable debt payment (i.e., an income-contingent debt-to-earnings ratio), still 34% exceeded the threshold
  - 29% were aware of government repayment assistance programs
- Many graduates will make sizeable student loan repayments for a number of years; and some will require assistance. Only a small group of borrowers were aware of repayment assistance programs; increased communication of what is available will help more graduates manage their student loan repayment.

Graduates from Low-Income Families are More Likely to Have Borrowed Heavily and to Face a Significant Financial Challenge in Repaying this Debt

- Family educational background significantly influences how graduates pay for their degree. Compared with first-degree holders from the most highly educated families, first-degree holders with parental educational attainment of a high school diploma or less...
    - were less likely to rely on their parents as a main source of financing (12% vs 36%)
    - were more likely to borrow (76% vs 55%) and to borrow in the highest range ($30,000 or more: 46% vs 26%)
    - accumulated $7,000 more in education-related debt by graduation ($26,327 vs $19,305)
    - accumulated $8,000 more in education-related debt by 2005 ($32,123 vs $23,945)
- These findings suggest university education came at a higher personal cost for graduates with the lowest level of parental educational attainment, a proxy for family income, as they must repay not only the principle amount borrowed but also the interest charged on borrowing. For a student loan of $32,123 this could mean an additional $17,763 in interest charges over the life of the loan bringing total education-related debt to nearly $50,000 (vs $13,241 in interest charges on a loan of $23,945, totalling $37,186).

Graduates Were Highly Satisfied with their University Program and Experience

- *Thinking about the 2003 degree...*
    - 96% were satisfied or very satisfied with class sizes in general
    - 94% were satisfied or very satisfied with the quality of teaching
    - 96% reported that their ability to think independently and critically was developed to some or a great extent
    - 92% reported that their decision making skills were developed to some or a great extent

- *Overall Evaluation of University Education...*
    - 91% would choose to go to university if given the opportunity to do it all over again
    - 87% judged that their university education was worth the personal investment
    - 76% judged that their university education was worth the financial investment

- The majority of graduates - even those who returned for further study, those who borrowed to finance their degree, and those who experienced difficulty with their student loan payments - were highly satisfied with their program and would, if given the opportunity, do it all over again.

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INTRODUCTION

The Maritime Provinces Higher Education Commission's graduate survey program provides timely information about the region's university graduates in the years following graduation. This report, the sixth survey in the Commission's graduate survey program,[1] discusses findings about the Class of 2003 graduates who were surveyed in 2005.

In 2003, over 13,000 students graduated from the universities in the Maritime provinces. Two years after graduation, the Maritime Provinces Higher Education Commission (MPHEC), in partnership with the governments of New Brunswick, Nova Scotia and Prince Edward Island, contacted[2] a representative group of these graduates to determine how they view their 2003 degree and to also learn what they did in the two years following graduation.

Chapter 1 presents the profile of the Class of 2003 graduates, including distributions by gender, age, province of graduation, and language, and also includes an examination of the profile of first-degree holders: graduates who were at the beginning of their post-secondary education and career paths when they enrolled in their 2003 degree. This chapter lays the foundation for analyses found in later chapters as it provides not only standard demographic characteristics, but also data on several analytical variables used to examine graduate outcomes. These variables include: program orientation, parental educational attainment and region and province of residence.

Chapter 2 documents the graduates' 2005 views on their university experiences. The chapter first explores their perceptions about skill development in their degree and their level of satisfaction with the services they received. It then moves to a more broadly-based reflection on their university experience to determine whether, if given the opportunity to do it all over again, the graduates would make the same post-secondary choices.

Chapter 3 moves to an analysis of what the graduates do after completing their degree. It includes an examination of the percentage of graduates who pursued further study, what they chose to enrol in and who was most likely to have done so. The chapter also includes an examination of graduates' employment experiences and explores employed graduates' job quality and earnings in 2005.

Chapter 4 examines how the graduates financed their education and compares the experiences of different groups of graduates. It explores not only financing for the 2003 degree but also for any further study. The chapter also investigates the relationship between the debt incurred and monthly income to determine how graduates are managing their debt repayments.

Chapter 5 summarizes the central findings of the Survey of the Class of 2003 Maritime University Graduates and explores some of the potential policy implications of these data as well as areas for further research.

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[1] Surveys conducted to date are: Class of 1995 in 1996; Class of 1996 in 1997 and 2000; Class of 1999 in 2001 and 2004; and the current survey (Class of 2003 in 2005). The Commission's survey program now consists of a new cohort every four years interviewed two and five years after graduation.

[2] Appendix 1: Methodological Notes contains further information on the survey process as well as the analysis of the survey findings.

1 WHO ARE THE CLASS OF 2003 GRADUATES?

Table 1.1 presents the demographic profile of the Class of 2003 graduates and the comparable statistics for the Class of 1999. This table shows that the samples for each Class are very similar: the distributions are within one to two percentage points on nearly all measures.[3] For the Class of 2003, females account for a larger proportion of the sample than they did in 1999.[4] This continues a long-standing trend where the number of females and their percentage of the totals have steadily increased among university enrolments and graduates.

Table 1.1
Profile of the Class of 1999 and the Class of 2003 graduates

	Class of 1999		Class of 2003	
	n (4,202)	(%)	n (4,200)	(%)
Gender				
Male	1,707	41	1,497	36
Female	2,495	59	2,703	64
Residence Prior to Enrolling				
NS	1,923	46	1,834	44
NB	1,233	29	1,132	27
PE	206	5	252	6
Outside Maritimes	839	20	979	23
Province of Graduation				
NS	2,579	61	2,667	63
NB	1,444	34	1,337	32
PE	180	4	196	5
Age at Graduation				
19-22	1,208	29	1,107	27
23-24	1,244	30	1,247	30
25-29	909	22	927	22
30-39	454	11	489	12
40-49	300	7	294	7
50+	82	2	115	3
Marital Status				
Married	1,087	26	1,255	30
Living with Partner	463	11	568	14
Single	2,519	60	2,265	54
Separated/Divorced/Widowed	118	3	100	2
Dependent Children				
Yes	709	17	790	19
Language Spoken Most Often at Home				
English	3,665	87	3,695	88
French	409	10	378	9
English/French	54	1	10	<1
Other	69	2	112	3
Visible Minority				
Yes	190	5	245	6
Member of First Nations or Aboriginal				
Yes	56	1	62	1
Any Limitation on Activities				
Yes	123	3	120	3

Note: percentages may not add up to 100 due to rounding; cases of non-response are excluded.

[3] The margin of error for analysis at the Class-level is + 1.5%, 19 times out of 20.
[4] Women for this Class were 'oversampled' by approximately three percentage points when compared to the Class population (population: 61% female, 39% male; sample: 64% female, 36% male).

1.1 Key Analytical Variables

Throughout the report several analytical variables are used to examine the outcomes for Maritime university graduates. These variables have been derived over the course of the Commission's graduate survey program to help in the consistent analysis over time of the vast amount of available data. The choice of variables was informed by previous research about post-secondary education and graduate outcomes. It is important to keep in mind the distributions within these variables as one reads the report, as each can be a significant factor in graduate outcomes. The main analytical variables and their distributions in the Class of 2003 are described below.

First-degree holders vs other graduates

First-degree holders are those graduates who completed a Bachelor's degree in 2003 and who entered that program with a high school diploma as their highest level of prior education. For first-degree holders, the 2003 degree represents their starting point in post-secondary education, and most (86%) entered the degree within a year of high-school graduation. Analyses of this group therefore focus on a relatively homogeneous group of graduates and provide a clearer picture of outcomes and transitions from the beginning of their post-secondary education and career paths. For the Class of 2003, first-degree holders make up more than half (56%) the total weighted sample. Eighty five percent of this group were 24 years old or younger when they graduated in 2003,[5] and 62% were female.

The following table (Table 1.2) presents the demographic profile of first-degree holders for the Classes of 1999 and 2003.[6] As was the case for the entire Class, 2003 first-degree holders are very similar in their composition to their 1999 counterparts. Again, there were proportionately more women in the 2003 cohort than in the Class of 1999. For first-degree holders, there was also a difference in the proportion of graduates by province: Nova Scotian universities accounted for a greater proportion of graduates than had been the case in 1999.

[5] 42% were between 19 and 22 years of age; an additional 43% were either 23 or 24 years of age.
[6] The margin of error for analyses using this subsample of the Class is ± 2.0%, 19 times out of 20.

Table 1.2
Profile of first-degree holders, Classes of 1999 and 2003

	Class of 1999		Class of 2003	
	n (2,282)	(%)	n (2,359)	(%)
Gender				
Male	987	43	894	38
Female	1,295	57	1,465	62
Residence Prior to Enrolling				
NS	1,044	46	1,076	46
NB	727	32	682	29
PE	126	6	158	7
Outside Maritimes	385	17	442	19
Province of Graduation				
NS	1,290	56	1,434	61
NB	881	39	811	34
PE	111	5	114	5
Age at Graduation				
19-22	1,076	47	984	42
23-24	863	38	1,003	43
25-29	249	11	283	12
30-39	60	3	51	2
40-49	25	1	24	1
50+	7	<1	6	<1
Marital Status				
Married	313	14	393	17
Living with Partner	270	12	363	15
Single	1,665	73	1,586	67
Separated/Divorced/Widowed	24	1	12	<1
Dependent Children				
Yes	176	8	169	7
Language Spoken Most Often at Home				
English	2,003	88	2,109	89
French	222	10	206	9
English/French	26	1	5	<1
Other	28	1	39	2
Visible Minority				
Yes	94	4	103	4
Member of First Nations or Aboriginal				
Yes	28	1	29	1
Any Limitation on Activities				
Yes	51	2	55	2

Note: percentages may not add up to 100 due to rounding; cases of non-response are excluded.

As expected, first-degree holders are much more likely to be in the youngest age groups. By comparison, other graduates include a mixture of people at various stages of their education, and for them the 2003 credential was, in most cases, not their first involvement in post-secondary education.[7] Over two thirds

[7] Of those graduates not considered to be first-degree holders, only 130 out of 1,841 (7%) entered their program with a high school diploma as

(67%) of this group were female, and 80% were twenty-five years of age or older when they graduated in 2003.

Table 1.3 presents program characteristics for first-degree holders, other graduates and the Class as a whole. Eighty-seven percent of all first-degree holders completed their degree exclusively through full-time studies. A further 12% combined both full-time and part-time study, and only one percent completed their program entirely on a part-time basis. Other graduates, while most of them completed the program full-time (65%), were much more likely than first-degree holders to have completed their program on a part-time basis (23%). Their main reason for not studying exclusively full-time was having a full-time job (76%: other graduates who completed the program entirely part-time; 45%: other graduates who completed the program using a combination of both full-time and part-time study).

Table 1.3
The Class of 2003 program characteristics:
first-degree holders, other graduates and the Class as a whole

	First-degree holders (n=2,359) (%)	Other graduates (n=1,841) (%)	All graduates (n=4,200) (%)
Type of Study			
Full-time	87	65	77
Part-time	1	23	11
Combination	12	12	12
Leave of Absence?			
Yes	11	8	9
Program completed in a ...			
Shorter amount of time	5	17	10
Normal amount of time	72	67	70
Longer amount of time	23	16	20
Work placements as part of the program?			
Yes	23	34	28
Work during the school year (other than work placements)?			
Yes	76	70	73
Full-time employment during the school year?*			
Yes	17	37	26
Part-time employment during the school year?*			
Yes	72	44	59

Note: some graduates reported working both full-time and part-time during their 2003 program.

Employment during the school year was common for all graduates. For 28% of graduates, at least some employment experiences were part of their chosen program of study.[8] Outside of work placements, 73% of graduates were employed at some time during their program: 59% of all graduates worked part-time during the school year, while 26% had worked full-time.

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their highest level of education.

[8] This was significantly more likely if the graduate had completed an Applied/Professional program (19%) than if she/he completed a Liberal Arts & Sciences (5%) program (categories described in the following section); particularly among first-degree holders (Applied/Professional: 28%; Liberal Arts & Sciences: 5%).

Program orientation

Maritime university graduates have a wide range of areas in which to concentrate their post-secondary studies. The MPHEC groups academic major fields of study into nine broad categories: General Arts & Sciences, Education, Humanities & Related, Social Sciences & Related, Commerce & Administration, Agriculture & Biological Sciences, Engineering & Applied Sciences, Health Professions, and Mathematics & Physical Sciences.

University programs, however, can be categorized not only by their field of study but also by the orientation of those studies. Broadly, they either provide a focus on practical education and training, such as for a profession, or they focus more on the development of general skills and intellectual education.[9] The program orientation variable used in this report is dichotomous, and majors are assigned to one of two categories:[10] Liberal Arts & Sciences or Applied/Professional. Thus, Liberal Arts & Sciences programs include Biology, Geography, History, and Sociology. Applied/Professional programs, on the other hand, include Accounting, Education, Engineering and Nursing.

In the Class of 2003 overall 40% of graduates completed a Liberal Arts & Sciences program while 60% completed Applied/Professional programs. This distribution shifts among first-degree holders- Liberal Arts & Sciences: 56%; Applied/Professional: 44%.

Among first-degree holders, women (62%) were significantly more likely than men (47%) to have graduated with a Liberal Arts & Sciences degree, as were English-speaking graduates (59%), and graduates of the University of Prince Edward Island (70%) or a Nova Scotian university (60%).

Parental educational attainment

Research into graduate outcomes, and also into the accessibility of a university education, often includes analyses based on family background. While the most direct approach to exploring outcomes based on family background may be to compare graduates' experiences and activities on the basis of family income, the MPHEC cannot collect, within the parameters of its survey, reliable information about graduates' socio-economic status while they were growing up. Respondents were, however, asked to report the highest level of education attained by their mothers and their fathers; therefore, we again[11] use the highest level of parental educational attainment (also referred to as "family educational background") as a proxy for family income.

The "parental educational attainment" variable used in this analysis combines both the mother's and father's highest level of education. The analysis then groups graduates into one of three categories based on the highest level of education of either parent:[12]

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[9] Smith, D. (2005). Liberal Arts vs Applied Programming: The Evolution of University Programs in Manitoba. *Canadian Journal of Higher Education*, XXXV, No.1.

[10] There are some programs that provide a mixed orientation, but they are too few to comprise a separate category for the purposes of this report. The list of majors assigned to each category is found in Appendix 2.

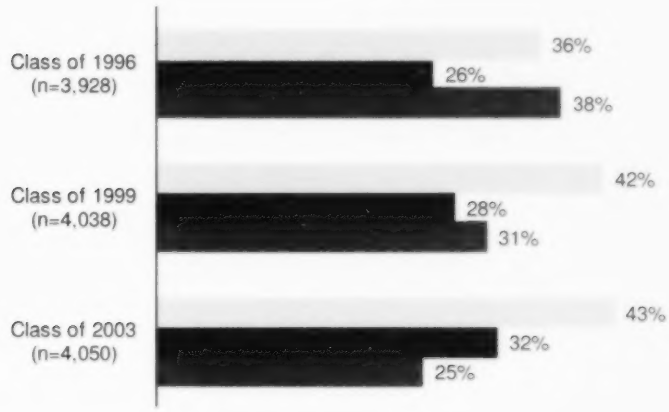
[11] The same approach was used in *A Lasting Legacy: The Impact of Family Educational Background on Graduate Outcomes* and *Five Years On: A Survey of Class of 1999 Maritime University Graduates*.

[12] Excluded from the analysis are those graduates who did not know or who declined to report the highest level of education of either parent.

- High school diploma or less;
- PSE below Bachelor's degree (includes trade, community college or hospital-based certificates or diplomas, and completion of a university certificate or diploma below the Bachelor's level, or attendance at a university without earning a credential); and
- Bachelor's degree or above (includes Bachelor's, First Professional, Master's or PhD degrees, and graduate level certificates or diplomas).

Figure 1.1 shows that the parental educational attainment of Maritime university graduates rose considerably across the three cohorts: the proportion of graduates whose parents with no post-secondary training declined in 1999 and again in 2003. At least part of this change can be explained by a change in educational attainment in the general population. While parental educational attainment could not be measured directly, Census (1996 and 2001) data show that the highest level of educational attainment of women and men aged 45 to 64 (the age range most likely to capture most graduates mothers and fathers) rose in these years. Between 1996 and 2001 the proportion of men whose highest level of educational attainment was a high school diploma or less decreased eleven percentage points; for women, the decrease was thirteen percentage points.[13]

Figure 1.1
Distribution of graduates by parental educational attainment, by graduating class



Since the variable parental educational attainment combines both the mother's and father's highest level of education, the diversity of mothers' and fathers' combined level of education was also examined across the cohorts. Between the Classes of 1996 and 2003 there was a shift in the educational attainment pairings of parents. Fathers and mothers with educational attainment of a high school diploma or less were less likely to have partners who also had this level of education in the Class of 2003 than had been the case for the Class of 1996.[14] This change partly explains the shift in parental educational attainment across cohorts.

[13] We calculated a ratio to estimate the representation of family educational background within the cohorts compared to the general population. See Appendix 1: Methodological Notes for further information.

[14] Father with a high school diploma or less → Mother with a high school diploma or less – Class of 1996: 70%; Class of 1999: 60%. Mother with a high school diploma or less → Father with a high school diploma or less – Class of 1996: 75%; Class of 1999: 65%.

Region and province of residence: prior to enrolling and two years after graduation

The inflow and outflow of graduates have long been concerns to Maritime governments: in particular, the number of graduates who come into the Maritime provinces does not equal the number who are from the region but leave after graduation. To combat this trend, Maritime governments have implemented various programs designed to recruit, retain and/or repatriate university graduates in order to increase their pools of highly qualified personnel. For example, both the New Brunswick and Nova Scotia governments recently implemented tax credit programs that give tax rebates to graduates living and working in the province following graduation.[15]

Since population statistics show that the typical university-aged population (18 to 24) is declining in the region,[16] and Maritime university participation rates are already the highest in Canada,[17] the inflow and outflow of graduates are expected to become even more of a concern. Universities will look to recruit more students from outside the region to diminish the impact of projected enrolment shortfalls; yet survey data routinely show that these graduates are less likely to stay than graduates who have grown up in the region.

There are no easy answers here. However, an understanding of regional and provincial mobility patterns, and mobility among particular groups of graduates, can help to inform planning and decision-making processes.

Regional mobility pattern

Of the 4,200 Class of 2003 graduates surveyed, over three quarters (77%) were originally from the Maritimes (i.e., they lived in the region 12 months prior to enrolling in their program), and of that group, 79% (2,545 out of 3,218) resided in the region in 2005.

Of those who came from outside the region, most had lived in Ontario twelve months prior to enrolling (334/979 or 34%), followed by Newfoundland and Labrador (215/979 or 22%) and a country outside Canada or the United States (151/979 or 16%). Two years after graduation, one quarter of these graduates reside in the region.[18]

The *Survey of Class of 1999 Maritime University Graduates in 2001*[19] noted that there was a potential for continuing net loss of graduates. This judgement was based on trends recorded for the Class of 1996, and on the fact that, two years after graduating, 42% of respondents expressed a willingness to move to another part of Canada if they were "offered a better job." Findings from the follow-up to that survey in 2004[20] showed that indeed net loss of graduates had grown over time, as a greater proportion of Class of 1999 graduates lived outside the region five years after graduation.

From a cross-cohort perspective, however, the retention of Maritime university graduates has not changed since 2001. When we combine the migration patterns of the two groups of graduates (those who came from

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[15] Details on the New Brunswick Tuition Tax Cash Back Credit program can be found at: www.gnb.ca/0162/tax/NBTR/NBttcbc-e.asp. Details on the Nova Scotia Post-Secondary Graduate Tax Credit program can be found at: www.gov.ns.ca/snsmr/gtc/

[16] Between 1996 and 2005, the number of individuals in the Maritime region aged 18 to 24 declined 3.8% from 180,911 to 174,347. Source: Statistics Canada. *Annual Demographic Statistics* (1998 and 2005). Catalogue no. 91-213.

[17] MPHEC. (2003). Profile of Maritime University Students: Enrolment, Participation, and Degree Completion. *Trends in Maritime Higher Education*. 2(1).

[18] Among those originally from outside the region and who live in the Maritimes in 2005 (n=253), graduates originally from Newfoundland and Labrador were most likely to have stayed (28%), followed by Ontario (23%) then a country outside Canada or the US (18%).

[19] Maritime Provinces Higher Education Commission. (2003). *Survey of 1999 Maritime University Graduates in 2001*. MPHEC. Fredericton, NB.

[20] Maritime Provinces Higher Education Commission. (2006). *Five Years On: A Survey of Maritime University Graduates*. MPHEC. Fredericton, NB.

outside the region and those who had lived in the region prior to enrolling), the net retention[21] of Class of 2003 graduates is relatively the same as it was for the Class of 1999 (Class of 1999 in 2001: 85%; Class of 2003 in 2005: 87%).

The fact that net retention rates have not declined is encouraging. At the same time, the migration patterns of future Maritime university graduates will be monitored to determine whether this retention rate holds over time.

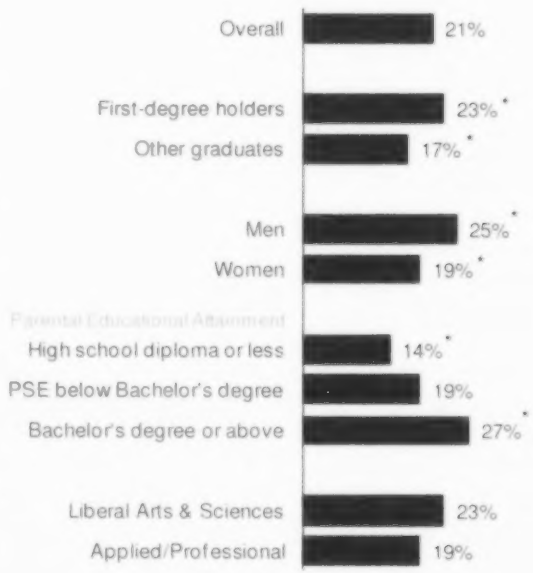
Who leaves the region?

Among the graduates originally from the Maritimes, certain groups were more likely than others to be living outside the region in 2005. Figure 1.2 shows that first-degree holders (23%) were significantly more likely than other graduates (17%) to have moved, as were men (25%) and graduates from the highest family educational backgrounds (27%).[22]

Although differences by program orientation were not statistically significant, there were observable differences in the percentage of original Maritimers living outside the region by field of study. Of the nine "field of study groupings" (listed earlier in the chapter), four differed significantly from the average: graduates of Commerce & Administration (15%) and Education (15%) programs were significantly less likely to be living outside the Maritimes; graduates of Mathematics & Physical Sciences (33%) and Engineering (31%) programs were significantly more likely to be living outside the region.

Similar groups of graduates were also likely to be living outside the region when examining data for the Class of 1999 in 2001.[23]

Figure 1.2
Proportion of original Maritime residents living outside the region in 2005 by selected characteristics



* statistically significant difference

[21] Net retention is calculated as follows: (# from outside the region living in the Maritimes + # originally from the Maritimes still living in the region) / # of original Maritime residents.
[22] In the case of first-degree holders, differences by gender and family educational background persist.
[23] Percent living outside the region, by field of study, for the Class of 1999 in 2001 (statistically significant difference): Education (16%), Social Sciences (17%), Mathematics & Physical Sciences (35%), Engineering (39%).

Provincial mobility patterns

Table 1.4 presents the mobility patterns of Maritime university graduates. It shows their original province of residence (i.e., province of residence 12 months prior to enrolling), their province of graduation and their province of residence in 2005. The following paragraphs describe the migration patterns for each Maritime province and for those originally from outside the region. Data for the Class of 1999 in 2001 are also provided in the discussion.

Table 1.4

Distribution of Maritime university graduates by province of residence prior to enrolling, province of graduation and current province of residence

	Province of graduation (2003) and current province of residence (2005) (%)							
	PE		NS		NB		Outside Maritimes	
	2003	2005	2003	2005	2003	2005	2003	2005
Province of Residence 12 months prior to enrolling								
PE (n=252)	57	61	29	11	14	7	n/a	21
NS (n=1,834)	1	1	93	74	6	4		21
NB (n=1,132)	1	1	17	8	82	70		21
Outside Maritimes (n=979)	2	1	72	16	26	8		74

Note: missing cases are excluded

Prince Edward Island

More than half (57%) of Class of 2003 graduates originally from Prince Edward Island studied in their home province, the smallest percentage in the three provinces. By 2005, the number of original PEI residents living in their home province had rebounded somewhat, an increase of four percentage points to 61%. Prince Edward Island is the only province to have increased the proportion of its residents living in the province in the two years after graduation than was the case at graduation point.

Prince Edward Island retained approximately the same percentage of its residents two years after graduation (Class of 1999 in 2001: 63%; Class of 2003 in 2005: 61%).

When we consider the inflow and outflow of graduates in the province, Prince Edward Island has a net retention rate[24] of 76% two years after graduation - six points lower than had been the case for the Class of 1999 in 2001 (82%).[25]

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[24] (Number from outside the province living in PEI (n=36) + number originally from PEI living in the province in 2005 (n=155)) / number of original PEI residents (n=252).

[25] Although within the margin of error for the sample size (± 8 percentage points).

Nova Scotia

The proportion of Maritime students who graduated from their home province was greatest for Nova Scotia (93%); compared to the Class of 1999, this trend has not changed. Two years after graduation, Nova Scotia retained 74% of its graduates who were originally from the province, the largest decrease among the three provinces, but the same percentage that was observed for the Class of 1999 in 2001 (73%). While a small proportion of NS residents moved to another Maritime province after graduation, for the most part those who left the province left the region altogether.

When we consider the inflow and outflow of graduates in the province, Nova Scotia has a net retention rate[26] of 89%, the highest of the three Maritime provinces and similar to the net retention rate for the Class of 1999 in 2001 (88%).

New Brunswick

Eight of every ten (82%) Maritime university graduates originally from New Brunswick completed their education in their home province. Two years after graduation, New Brunswick retained 70% of its graduates who were originally from the province, essentially the same proportion the Class of 1999 retained in 2001 (71%).

When we consider the inflow and outflow of graduates in the province, New Brunswick has a net retention rate[27] of 86%; the greatest increase of the three provinces over the rate for the Class of 1999 in 2001 (82%).

Among New Brunswick residents, Francophones (78%) were significantly more likely than Anglophones (67%) to be living in the province in 2005.

Outside the Maritimes

Most Maritime university graduates who came from outside the region completed their degree at a Nova Scotia university (72%); New Brunswick educated most of the remaining graduates (26%) in this category.

Two years after graduation, most (725/979 or 74%) graduates originally from outside the region left the Maritimes; however, of those who stayed, the majority chose to live in Nova Scotia. Compared to the Class of 1999 in 2001, these distributions are similar.

Migration patterns of first-degree holders

For all provinces, the proportion of Maritime first-degree holders who studied in their home province is similar to that observed for the Class as a whole. Differences were observed, however, for province of current (2005) residence: whereas 61% of graduates originally from Prince Edward Island lived in their home province two years after graduation, only 54% of these first-degree holders lived in the province. In Nova Scotia a decrease is also observed: 74% of the entire Class and 70% of first-degree holders respectively lived in the province two years after graduation.

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[26] (Number from outside the province living in NS (n=281) + number originally from NS living in the province in 2005 (n=1,352)) / number of original NS residents (1,833).

[27] (Number from outside the province living in NB (n=179) + number originally from NB living in the province in 2005 (n=795)) / number of original NB residents (1,131).

When we count together the inflow and outflow of first-degree holders in the Maritimes, the net retention[28] for the region is 83%, essentially the same as that for the Class of 1999 in 2001 (81%). For each Maritime province, net retention is lower among first-degree holders than the Class as a whole, and trends between cohorts that were noted earlier persisted at the first-degree holder level.[29]

Mobility patterns are important to Maritime governments as they seek to determine whether a sufficient proportion of the highly skilled people graduating from their publicly-funded universities remain in the region and where they do not, whether their numbers are at least being replenished by equally qualified graduates originally from outside the region that remain after graduation. At the same time, mobility patterns also provide further insight into the paths of Maritime university graduates after graduation. In particular, region of residence, particularly current region of residence, played a role in whether graduates pursued further education and their level of employment earnings two years after graduation (see Chapter 3).

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[28] (Number from outside the region living in the Maritimes (n=117) + number originally from the region living in the Maritimes in 2005 (n=1,469)) / number of original Maritime residents (1,917).

[29] Net retention of first-degree holders: PE - Class of 1999 in 2001: 78%; Class of 2003 in 2005: 68%. NS - Class of 1999 in 2001 and Class of 2003 in 2005: 84%. NB - Class of 1999 in 2001: 78%; Class of 2003 in 2005: 84%.

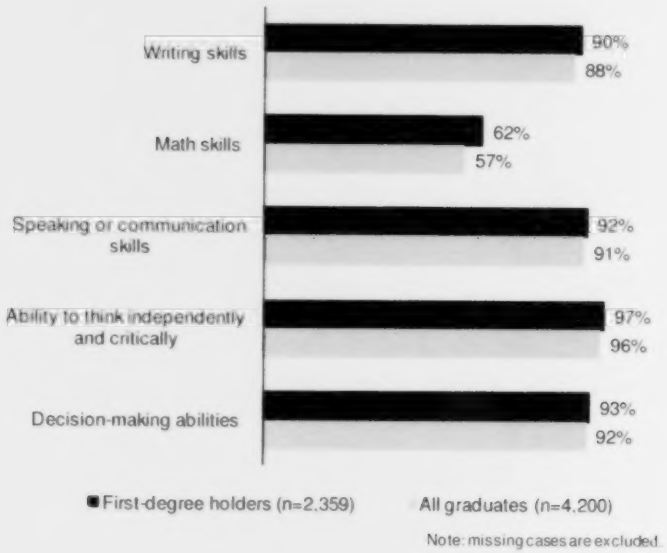
2 GRADUATES' VIEWS ON THEIR UNIVERSITY EXPERIENCE

This chapter explores the graduates' 2005 perceptions of their university experience.[30] The chapter first explores their perceptions about skill development in their program and their level of satisfaction with the services they received. It then moves to a more broadly-based reflection on their university experience to determine whether, if given the opportunity to do it all over again, the graduates would make the same post-secondary choices.

2.1 Skill Development in the 2003 Program

Figure 2.1 shows that the Class of 2003 graduates, whether we consider the Class as a whole or only first-degree holders, judged that their program developed a range of skills to some or to a great extent. The graduates judged that independent and critical thinking skills were the most developed, while mathematics was the least developed[31] among the skill sets measured. These responses very closely resemble responses given by the Classes of 1999 and of 1996.

Figure 2.1
Percentage of graduates reporting that their 2003 program did the following to some or a great extent...



Note: missing cases are excluded.

[30] See Appendix 1: Methodological Notes for information on the analysis of scale variables.
[31] In fact, 24% of graduates said their program did not develop their math skills at all.

While there was little variation within the Class, differences were observed by gender and by program orientation. Gender differences, however, were not statistically significant when controlling for program orientation.

Graduates of Applied/Professional programs (63%) were significantly more likely than their Liberal Arts & Sciences (47%) peers to report that their math skills were developed to some or a great extent while completing their program. Liberal Arts & Sciences (91%) graduates, on the other hand, were significantly more likely than Applied/Professional (86%) graduates to indicate that their writing skills were developed to this degree.

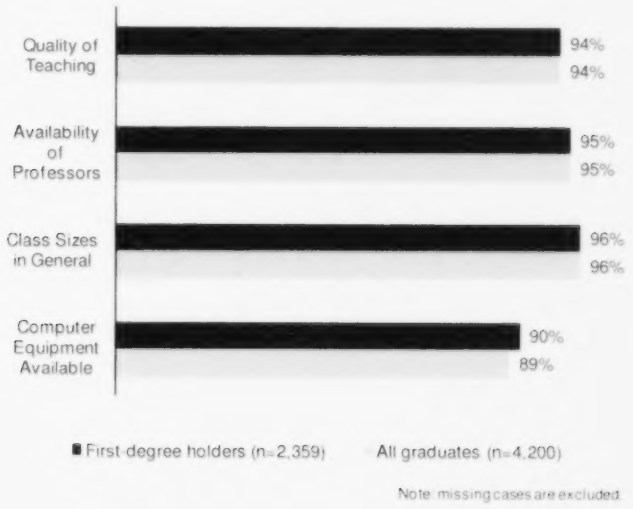
When asked about the extent to which their program provided knowledge about career opportunities, 70% of graduates reported that their program had done this to some or a great extent. Again, a significant difference was observed by program orientation (Liberal Arts & Sciences: 65%; Applied/Professional: 74%), not a surprise given the defining characteristics of these program types.

There was no significant difference in reported skill development by province of university, family educational background, or prior region of residence, with one exception: Liberal Arts & Sciences graduates who lived in the Maritime provinces prior to completing their program (50%) were significantly more likely than their counterparts from outside the region (37%) to report that their math skills had been developed to some or a great extent.

2.2 Satisfaction with Services

Figure 2.2 shows that the 2003 graduates were highly satisfied with the services they received while completing their program. Although there were some differences between groups, these differences were minimal, and the proportion of graduates who reported that they were satisfied/very satisfied remained near or above the 90% mark on each of the four measures. These findings are consistent with data from previous cohorts.

Figure 2.2
Percentage of graduates reporting they were satisfied or very satisfied with...



Note: missing cases are excluded.

2.3 If Given the Opportunity, Would the 2003 Graduates Make the Same Choices?

If given the opportunity to do it all over again, nine out of ten graduates (the same among first-degree holders) would choose to go to university, and eight out of ten would choose the same institution and the same field of study.[32]

Among all graduates, as well among first-degree holders as a group, the proportion who would again choose to go to university did not vary significantly by gender, program orientation, province of university, or family educational background, with one exception: 2003 graduates whose parental educational attainment was a Bachelor's degree or above were slightly more likely, though all groups were above 90%, to say that they would choose to go to university.[33]

Similarly, there was no significant difference in the proportion of graduates who would return to the same institution, among all graduates or first-degree holders as a group, by gender, program orientation, province of university, family educational background or prior region of residence. As shown below, however, there was a significant difference in whether or not a graduate would choose the same field of study.

Liberal Arts & Sciences graduates were significantly less likely (75%) than their Applied/Professional (83%) counterparts to say that they would choose the same field of study (Figure 2.3). The main reason for this was job-related: nearly half (47%) of the Liberal Arts & Sciences graduates reported that they could not find work in their field.[34] Another one quarter of these graduates would choose a different field because of a change of interest.[35]

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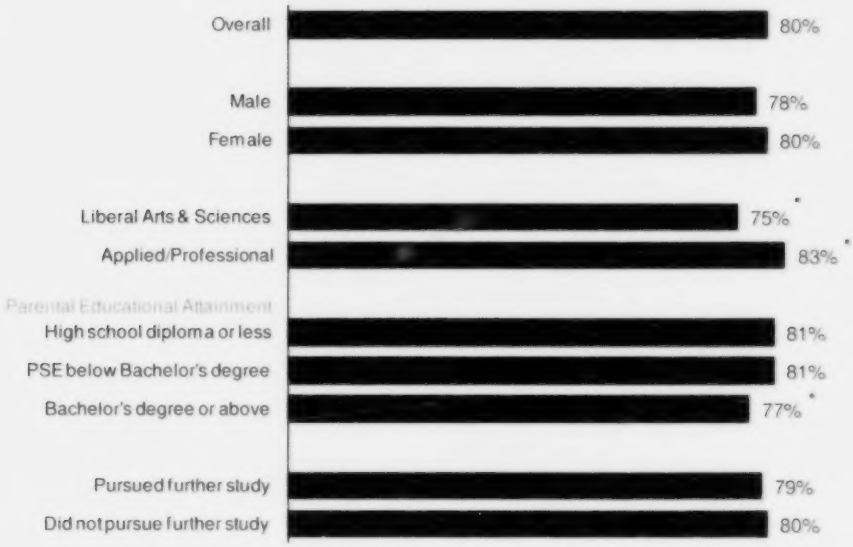
[32] See Appendix 1: Methodological Notes for information on analysis of scale variables.
[33] Note: excludes neutral cases. See Appendix 1: Methodological Notes for further information on the analysis of scale variables.
[34] Among all graduates who would not choose the same field of study, 40% provided this answer.
[35] Among first-degree holders differences by program orientation, in choosing the same field of study and reasons for not choosing the same field of study, were similar.

Figure 2.3
If given the opportunity to do it all over again, percent of graduates who would choose the same field of study, by selected characteristics



* statistically significant difference.
Note: missing cases are excluded.

Those 2003 graduates whose parental educational attainment was a Bachelor's degree or above (77%) were also significantly less likely to say that they would choose the same field of study; however, it should also be noted that more of these graduates completed Liberal Arts & Sciences programs.

Since nearly all graduates would make the same post-secondary choices if given the opportunity, it is not surprising to learn that nearly all graduates judged that their university education was worth the personal and financial investment required; these statistics are explored further in Chapter 4.

3 What do Graduates do After Completing their Program?

A major purpose of the Commission's graduate follow-up survey is to obtain information on the experiences of the graduates of 2003 after completing their program, and particularly to monitor their transitions from the "learning force" to the workforce and back again. As this chapter will show the latter is often the case for Maritime graduates: half of the Class of 2003 returned to study within two years of graduating. At the same time, this chapter will also show that Maritime university graduates have successfully moved into the labour market, though some groups clearly have greater success than others.

3.1 Post-2003 Education

Within two years of graduation, half of all graduates (45%) chose to pursue further study. As might be expected, the likelihood that a graduate enrolled in post-2003 studies depended to a large extent on their prior educational experience: 55% of first-degree holders enrolled in post-2003 studies compared to 32% of other graduates. Since first-degree holders were at the same point in their educational paths at graduation, this analysis of post-2003 education focuses on this relatively homogeneous subgroup of graduates.

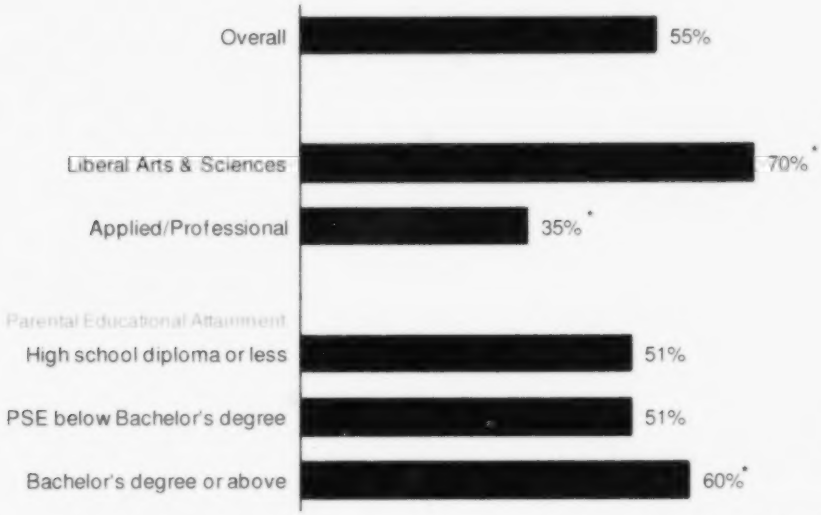
Who enrolled in post-2003 education?

Among first-degree holders, 57% of women and 51% of men chose to pursue further study; this difference, however, is not statistically significant. Program orientation and parental educational attainment, on the other hand, are statistically significant variables in determining whether a graduate pursued further study.

As demonstrated in Figure 3.1 first-degree holders with a Liberal Arts & Sciences (70%) degree were significantly more likely than those with Applied/Professional degrees (35%) to enrol in further study by the two-year-out mark. This is consistent with findings for the Class of 1999 in 2001, and indeed, across the Classes, the gap between the two groups has grown, from 27 to 35 percentage points.[36]

[36] In the Class of 1999 in 2001, 69% of first-degree holders in the Liberal Arts & Sciences and 42% of those in Applied/Professional programs pursued post-2001 studies.

Figure 3.1
Which first-degree holders pursued further education?



* statistically significant difference

Family educational background also plays a role in the pursuit of further study. As demonstrated in the Commission's report, *A Lasting Legacy: The Impact of Family Educational Background on Graduate Outcomes*, a key determinant of returning to study for the Class of 1999 was having parents whose highest level of education was a Bachelor's degree or above. For the Class of 2003, this statistically significant trend persists: 60% of these graduates pursued further study compared to 51% of those with lower levels of parental educational attainment.[37]

Part of this difference can be explained by a difference in the type of 2003 degree completed: graduates whose parents had completed a Bachelor's degree or above were significantly more likely to have graduated with a Liberal Arts & Sciences degree.[38] And, as described above, Liberal Arts & Sciences graduates were significantly more likely to pursue further study.

Research by Millet (2003)[39] shows that undergraduate debt can also influence the decision to pursue further study. For Class of 2003 first-degree holders, those who did not borrow were significantly more likely than those who had borrowed to pursue further study, and significant differences were evident between the two ends of the spectrum: zero borrowing (62%) and borrowing in the highest range (45%) (Figure 3.2).

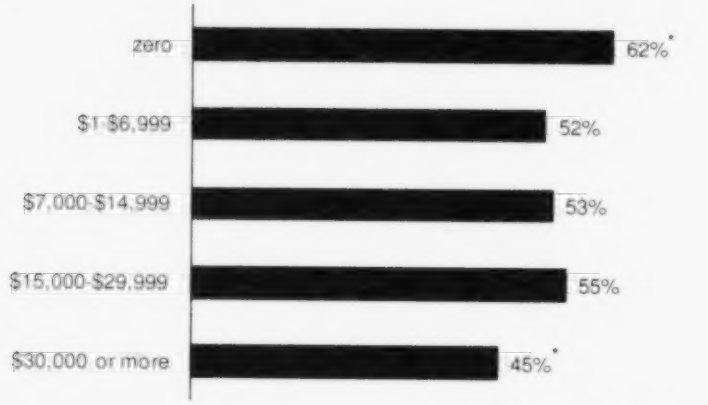
---

[37] Percent who pursued further post-secondary education for the Class of 1999 in 2001: high school diploma or less: 42%; PSE below Bachelor's degree: 45%; Bachelor's degree or above: 52%.

[38] *Liberal Arts & Sciences* - High school diploma or less: 53%; PSE below Bachelor's degree: 51%; Bachelor's degree or above: 61%. *Applied/Professional* - High school diploma or less: 47%; PSE below Bachelor's degree: 49%; Bachelor's degree or above: 39%.

[39] Millet, C.M. (2003). How undergraduate loan debt affects application and enrolment in graduate or first professional school. *The Journal of Higher Education*, vol 74 (4).

Figure 3.2
Percentage of first-degree holders who pursued further study, by borrowing range



* statistically significant difference

In order to understand the relative influence of each of these variables (parental educational attainment, program orientation and borrowing) on whether a first-degree holder pursued further study, a logistic regression model was developed. Results of the analysis indicate that program orientation, parental educational attainment and the range of the amount borrowed all have a significant impact on the pursuit of further study.

For Class of 2003 first-degree holders, graduating from a Liberal Arts & Sciences program increased the odds of pursuing further study by 4.2 times; the odds were also increased (1.2 times) if a graduate came from a household where the highest level of educational attainment was a Bachelor's degree or above. Borrowing for the 2003 degree, on the other hand, decreased the odds of pursuing further study by 33%.[40]

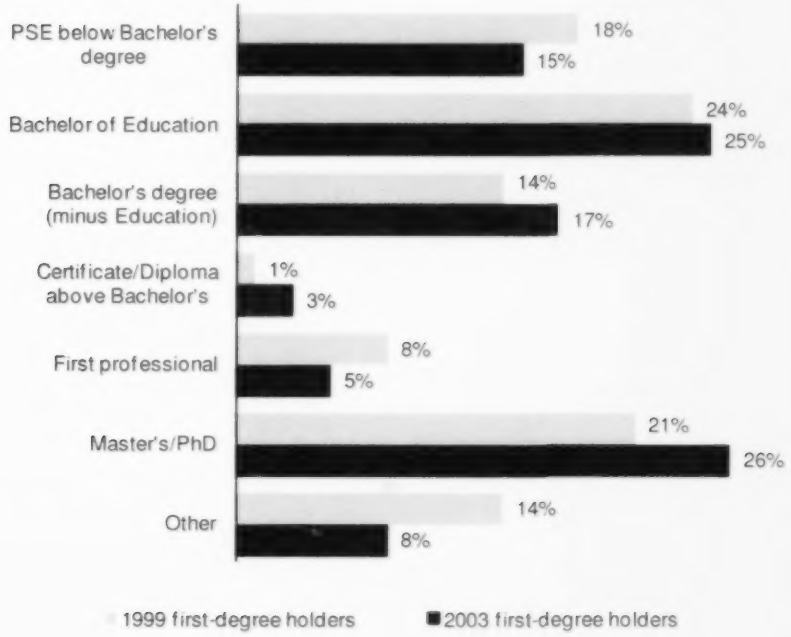
While program orientation most increases the likelihood that a first-degree holder will pursue further study, the combined impact of parental educational attainment and borrowing should be noted here. The fact that graduates with lower levels of parental educational attainment are less likely to pursue further study will affect their future employment prospects and their representation in most professions. Future reports will monitor this picture.

Programs attempted/completed

Given the high proportion of first-degree holders pursuing further study (i.e., 1,171 of the 2,359 first-degree holders), it is informative to examine the types of programs they enrolled in. Of those who pursued further study, most (90%) had enrolled in just one program after graduation.[41] Among these graduates, the most common program choice was a graduate-level degree (26%) or a Bachelor of Education (25%). This follows the same trend as the Class of 1999 in 2001, where first-degree holders most commonly chose to pursue a Bachelor of Education degree (23%) or a Master's/PhD (21%) program (Figure 3.3).

[40] See Appendix 3 for results of this Logistic Regression.
[41] Nine percent enrolled in two programs and one percent enrolled in three or more programs.

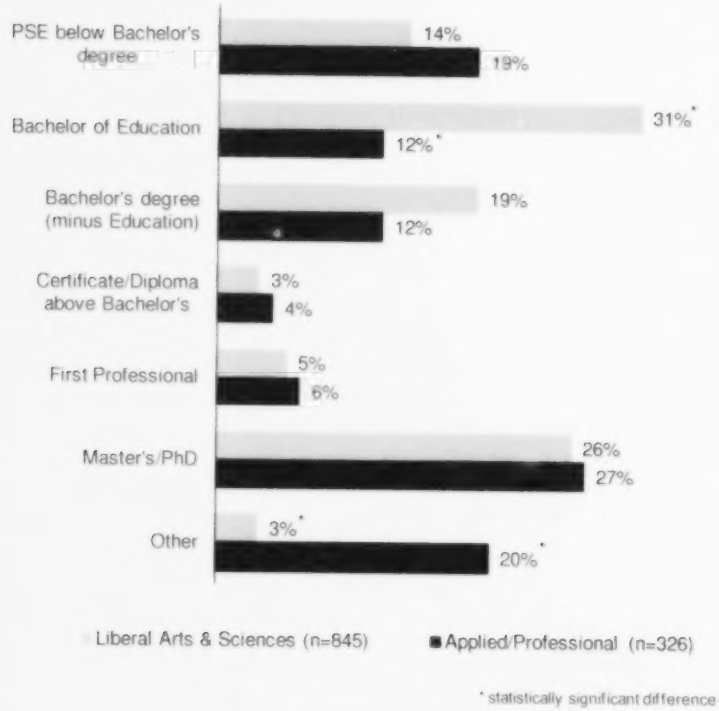
Figure 3.3
Type of program first-degree holders enrolled in after graduation



Program orientation

Figure 3.4 shows that not only does program orientation affect whether first-degree holders pursue further study, but also what they study when they do return.

Figure 3.4
Distribution of the type of program pursued in the two years following graduation, by program orientation



The most popular choice of Liberal Arts & Sciences graduates was a Bachelor of Education degree (31%). Another one quarter enrolled in graduate-level study (Master's/PhD, 26%), while 19% enrolled in a Bachelor's degree other than the Bachelor of Education. For Applied/Professional graduates, the distribution was quite different. While one quarter of these graduates also pursued graduate level study, only 12% pursued a Bachelor of Education degree or a Bachelor's degree other than a Bachelor of Education. Twenty percent of Applied/Professional graduates, however, enrolled in some other type of post-secondary education, such as certification and licensing programs.

Parental educational attainment

When program orientation is taken into account, differences in the type of program pursued after completing the 2003 degree were evident by parental educational attainment. Among Liberal Arts & Sciences graduates, first-degree holders with lower levels of parental educational attainment were significantly less likely to have pursued a Master's/PhD program (16%) than their counterparts from the most highly educated families (Bachelor's degree or above, 33%). At the same time, graduates from the most highly educated families were also significantly less likely to have enrolled in a Bachelor of Education program (Bachelor's degree or above: 25%; high school diploma or less: 39%).

Among Applied/Professional graduates, the only significant difference concerned the likelihood of pursing a Master's/PhD program: graduates with parental educational attainment of a Bachelor's degree or above were significantly more likely than the average to have pursued a Master's/PhD program (37%).

Region of residence

First-degree holders living outside the region in 2005 were significantly more likely to have enrolled in a Master's/PhD program (36%) than were graduates living in the Maritimes (22%).[42] The orientation of the 2003 degree accounts for some of this difference: there was no significant difference in the type of program Applied/Professional graduates enrolled in whether they lived in or outside the region. Among Liberal Arts & Sciences graduates, however, first-degree holders living outside the region were significantly more likely to have enrolled in a Master's/PhD program (37%; living in the Maritimes: 21%); while graduates living in the Maritimes were more likely to have pursued a second Bachelor's degree.[43]

It may be that some Maritime residents who wish to pursue further study leave the region because few of the region's universities offer their desired graduate-level program. Among original Maritime residents living outside the region in 2005, 33% said their most recent move was to attend school. Although several Maritime universities offer graduate degrees, the region comprises mainly primarily undergraduate universities, most of which have a relatively limited range of graduate-level programs.

Reasons for pursuing further post-secondary education

Half of all first-degree holders who pursued further study said they had done so for job-related reasons (54%).[44] Whether this motivation emerged after completing the degree or sometime earlier cannot be learned from the survey data. However, given that one quarter of graduates enrolled in a Bachelor of Education program, which usually requires the first Bachelor's degree to gain admission, the decision was probably made prior to completing the degree for at least some graduates. Current research[45] will provide some insight into the post-graduate intentions of Maritime university graduates and allow us to understand more fully graduates' motivations for pursuing further study.

Other reasons for pursuing further study include: general self-improvement (16%); the program is a prerequisite for further education (13%) (e.g., a Master's program is often a prerequisite for entrance into the PhD); the program is part of a certificate, degree or licensing program (13%) (e.g., accountancy designation); or other reasons (five percent).

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[42] At the same time, graduates living in the Maritimes were significantly more likely than those living outside the region to enrol in a second Bachelor's degree program. (*Living in the Maritimes* - Bachelor of Education: 28%; Other Bachelor's degree: 20%. *Living outside the Maritimes* - Bachelor of Education: 19%; Other Bachelor's degree: 12%.)

[43] *Living in the Maritimes* - Bachelor of Education: 34%; Other Bachelor's degree: 23%. *Living outside the Maritimes* - Bachelor of Education: 23%; Other Bachelor's degree: 11%.

[44] Job-related reasons include: to get a job, to get a better job, to keep a job, to do present job better, to earn more.

[45] The Commission, in partnership with the Canadian Council on Learning (CCL) and the government of New Brunswick, Nova Scotia, and Prince Edward Island under the Council of Atlantic Ministers of Education and Training (CAMET) have contracted The Strategic Counsel to conduct a survey of the 2007 Class of Maritime university graduates to examine their post-graduate intentions.

For the most part, reasons for pursuing post-2003 studies did not differ across the groups (i.e., gender, family educational background, program orientation, region of residence, province of university) with two exceptions: men were more likely than women to say that they had taken their post-2003 program because it was a prerequisite for further education, and, second, those living in the Maritimes in 2005 were more likely to indicate that they had taken their post-2003 program for job-related reasons. These differences are not unexpected in light of the differences noted in the type of program pursued.

3.2 Employment after Graduation

Graduates' employment status

Within two years of graduation, 87% of the Class of 2003 graduates had entered the labour force.[46] Compared to the Class of 1999 in 2001 (93%) and the general population in 2005 (93%),[47] the Class of 2003 has been slightly more successful in securing employment (96%), and first-degree holders have shown similar levels of employment success (Class of 1999: 91%; Class of 2003: 95%).Most groups of graduates were equally successful finding employment: there were no statistically significant differences in the employment rate[48] by gender, parental educational attainment, 2005 province of residence or program orientation.

Two years after graduation, most employed graduates were working in full-time[49] positions (85%).[50] Men (88%) were significantly more likely than women (83%) to be employed full-time, as were graduates of Applied/Professional programs (92%; Liberal Arts & Sciences graduates: 73%) and graduates of lower family educational backgrounds (high school diploma or less: 88%; PSE below Bachelor's degree: 87%; Bachelor's degree or above: 81%), although differences by family educational background were almost entirely the result of differences by program orientation. No significant difference was observed in the type of employment held by region of residence (i.e., those who live in the Maritimes compared to those living outside the region in 2005).

The graduates of 2003 who returned to study after completing their program were significantly more likely to be employed part-time (376/1,353 or 28%) than graduates who had not returned (156/2,130 or seven percent). And, of those who returned, graduates still enrolled in a program were significantly more likely to be employed on a part-time basis than those who had completed or stopped taking their program.

As was explained earlier in the report, the analysis of first-degree holders provides greater insight into the career paths of Class of 2003 graduates, since the separation of this group allows us to examine the career paths of a relatively homogenous group of graduates. The remainder of this chapter focuses on this subsample of graduates, though the data for the Class as a whole will be provided in some instances.

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[46] *In Labour Force*: graduates working, not working but looking for work, and not working but who have accepted a full-time job due to start within four weeks. Full-time students looking for part-time work are included in the labour force; full-time students looking for full-time work are not. *Not in the Labour Force*: Graduates not working full- or part-time during the reference week and not looking or not available for work. Full-time students looking for full-time work. (Of the 13% not in the labour force, most (79%) were full-time students.)

[47] Statistics Canada, CANSIM, Table 282-0002 (www40.statcan.ca/101/cst01/labor20a.htm).

[48] The employment rate is calculated by dividing the total number of people in the labour force (see definition in footnote 46 above) by the total number employed.

[49] Full-time employment is defined as working, on average, 30 hours or more per week; a graduate working less than 30 hours is considered to be employed part-time.

[50] This represents a difference of three percentage points compared with Canadian workers nationally (full-time = 82%). *Source:* Statistics Canada CANSIM Table 282-0002 (www40.statcan.ca/101/cst01/econ10.htm).

Job quality

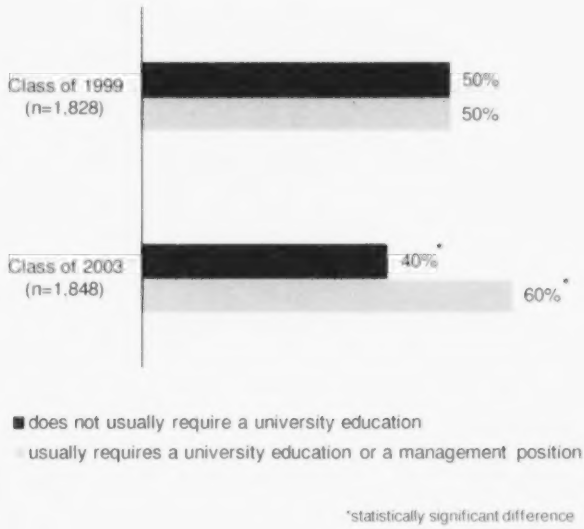
Occupational skill level

In order to assess whether first-degree holders obtain jobs requiring university level skills, the National Occupational Classification code structure developed by Statistics Canada was used to create a variable "occupational skill level" which contains two main categories: (1) occupations that usually require a university education or are management positions and (2) occupations that do not usually require a university education.

Occupations are assigned to these categories based on the skill level assigned by Statistics Canada to the National Occupational Classification codes, and thus allow us to examine the extent to which Maritime university graduates become employed in jobs requiring an advanced (i.e., university-level) level of education or at the managerial level. Further details on the coding of this variable are found under Appendix 4.

In 2005, 60% of employed first-degree holders held management positions or jobs that usually require a university education. By contrast, just 50% of employed Class of 1999 first-degree holders held these occupations in 2001 - a difference of ten percentage points[51] (Figure 3.5).

Figure 3.5
Type of occupation held by employed first-degree holders, Classes of 1999 and 2003



[51] Among full-time workers, these numbers are slightly higher - Class of 1999 in 2001: 51%; Class of 2003 in 2005: 63%.

Some of this difference may be due in part to the timing of the Class of 1999 survey where respondents were interviewed in the summer of 2001. As shown in Table 3.1, the most common occupation for graduates in either Class was K-12 teacher.[52] Given the yearly cycle for K-12 teachers, new graduates may have been employed in summer positions other than teaching (or not been in the labour force), while waiting to hear if they had secured a teaching position for the 2001-2002 school year. Graduates from the Class of 2003 were interviewed at a later point in the year (between October and December) and so this same situation was not present. The timing of the surveys also helps to explain the much higher percentage of first-degree holders in K-12 teaching in 2005.

Table 3.1
Top 10 occupations two years after graduation, among employed first-degree holders, Classes of 1999 and 2003

Class of 1999 (n=1,828)	Class of 2003 (n=1,848)
Occupation in 2001	**Occupation in 2005**
• Teachers K-12 (9.9%)	• Teachers K-12 (15.5%)
• Administrative/Clerical (9.8%)	• Administrative/Clerical (9.7%)
• Computer-Related/IT (6.0%)	• Managers (7.7%)
• Financial/Accounting (5.7%)	• Financial/Accounting (6.9%)
• Occupations in Art, Culture, Recreation and Sport (5.6%)	• Occupations in Art, Culture, Recreation and Sport (6.1%)
• Retail Sales & Supervisors (4.8%)	• Computer-Related/IT (4.7%)
• Technical Occupations in Natural and Applied Sciences (4.6%)	• PSE Professors/Instructors/TA/RA (4.3%)
• PSE Professors/Instructors/TA/RA (4.5%)	• Policy Researchers/Program Officers/Consultants (4.3%)
• Engineers (4.4%)	• Psychologists/Social Workers/Counsellors (4.0%)
• Nurses and Registered Nursing Assistants (4.4%)	• Nurses and Registered Nursing Assistants (3.9%)

Note: excludes missing cases; percentages are based on all occupations held and as a result do not sum to 100.

Among the Class of 2003 first-degree holders, the likelihood of being employed in a job that usually requires a university education or is a management position did not vary significantly by gender,[53] family educational background, or region of residence; however, the orientation of the 2003 degree was strongly linked to occupational skill level.

Two years after graduation, Applied/Professional graduates (65%) were significantly more likely to be employed in jobs requiring advanced skills than were Liberal Arts & Sciences graduates (55%) (Figure 3.6). While the same was true for the Class of 1999 in 2001, the difference by program orientation narrowed a substantial 17 percentage points between Classes.[54,55] The narrowing of the gap is due to gains made by graduates of Liberal

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[52] Appendix 5 documents the list of jobs grouped under each occupation category.
[53] For the Class of 1999 in 2001, there was a significant difference between women and men by occupational skill level; the shift between the two Classes is explored later in the chapter.
[54] This trend remains when considering only those employed full-time. *Class of 1999 in 2001*: percent employed in jobs requiring advanced skills - Applied/Professional: 66%; Liberal Arts & Sciences: 37%. *Class of 2003 in 2005*: percent employed in jobs requiring advanced skills - Applied/Professional: 67%; Liberal Arts & Sciences: 58%.
[55] As was noted earlier, the difference between the two Classes is probably in part the result of interview timing for the Class of 1999 survey.

Arts & Sciences programs. Whereas equal proportions of Class of 1999 and Class of 2003 Applied/Professional graduates held jobs requiring advanced skills (65%), the proportion of Liberal Arts & Sciences graduates employed in advanced-skill occupations changed from just 38% for the Class of 1999 in 2001 to 55% for the Class of 2003 in 2005.

Figure 3.6
Percent of first-degree holders whose job usually requires a university education or is a management position, Classes of 1999 and 2003

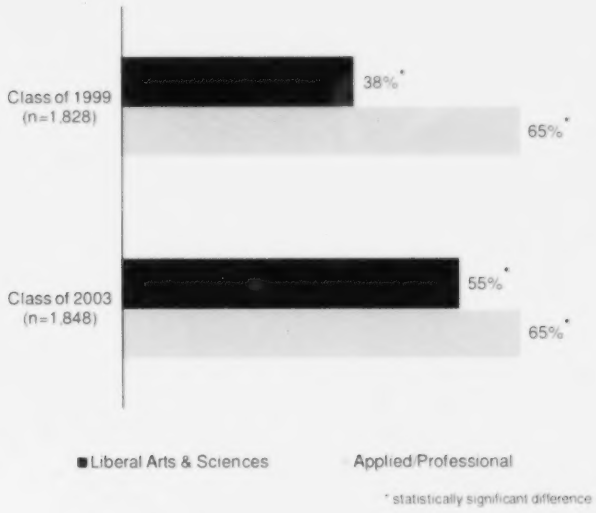


Table 3.2 presents the top ten occupations of employed first-degree holders who graduated from Liberal Arts & Sciences programs in 1999 and in 2003. As was the case when looking at occupations for the Class as a whole (Table 3.1), the most common occupation held by Liberal Arts & Sciences graduates was K-12 teacher; however, for this subgroup of graduates the growth in the proportion holding this occupation is greater (the percentage of Liberal Arts & Sciences graduates employed as teachers nearly doubled between cohorts from 12% to 22.3%). This change can be attributed in large measure to the fact that the Class of 1999 graduates were interviewed in the summer of 2001 and therefore would have been working in other occupations while they waited to learn if they had secured teaching positions for the 2001-2002 school year, or not working at all.

Table 3.2
Top 10 occupations among employed first-degree holders who graduated from a Liberal Arts & Sciences program

Class of 1999 (n=1,019)	Class of 2003 (n=962)
Occupation in 2001	**Occupation in 2005**
• Teachers K-12 (12.0%)	• Teachers K-12 (22.3%)
• Administrative/Clerical (10.6%)	• Administrative/Clerical (9.4%)
• Occupations in Art, Culture, Recreation and Sport (7.4%)	• Occupations in Art, Culture, Recreation and Sport (7.5%)
• PSE Professors/Instructors/TA/RA (6.7%)	• PSE Professors/Instructors/TA/RA (6.8%)
• Retail Salespersons & Supervisors (6.1%)	• Psychologists/Social Workers/Counsellors (5.7%)
• Technical Occupations in Natural and Applied Sciences (5.8%)	• Managers (5.3%)
• Psychologists/Social Workers/Counsellors (5.0%)	• Policy Researchers/Program Officers/Consultants (4.2%)
• Bartenders, Food and Beverage Servers (5.0%)	• Retail Salespersons & Supervisors (3.9%)
• Policy Researchers/Program Officers/Consultants (4.5%)	• Bartenders, Food and Beverage Servers (3.6%)
• Technical Occupations in Health (3.1%)	• Technical Occupations in Health[1] (2.8%)

Note: excludes missing cases; percentages are based on all occupations held and as a result do not sum to 100.
[1] "Judicial and Protective Services" also accounted for 2.8% of the occupations of Liberal Arts & Sciences graduates in 2005; however, it was slightly lower than "Technical Occupations in Health" prior to rounding, thus it is not shown in the table.

The Class of 2003 Liberal Arts & Sciences graduates have many of the same occupations as the Class of 1999; however, some percentages have shifted. These shifts correspond with the growth in occupational skill level described above as the increases are largely in jobs that require a university education or are management positions, while the decreases are in jobs that do not usually require a university education.

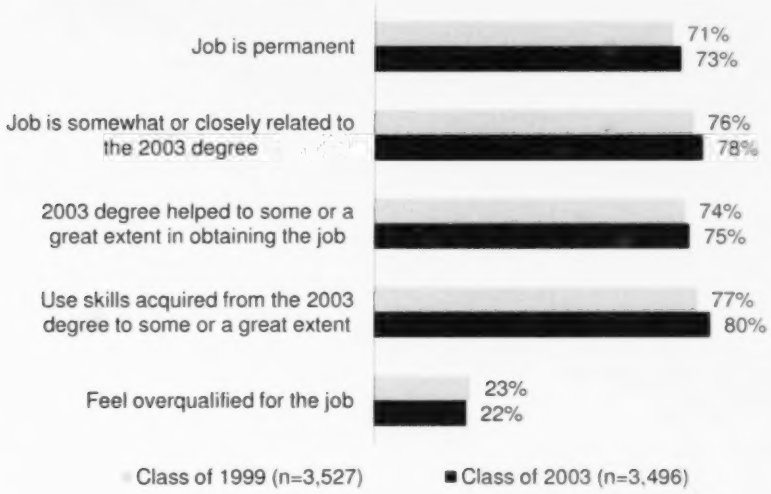
Other measures of job quality

Measures of job quality not only include job characteristics (as defined through the NOC code structure) but also how graduates perceive their employment. During the survey, respondents were asked to comment on the extent to which they were using skills acquired in their field of study, the relatedness of their job to their field of study, and their level of job satisfaction. Data from these questions provide insight into qualitative measures of the types of jobs graduates obtain.

Figure 3.7 shows that graduates of Maritime universities continue to report favorably on the jobs they hold two years after graduating. Despite these overall evaluations, significant differences were evident by type of employment (full-time or part-time) and by program orientation.[56]

[56] For the Classes of 1999 and 2003, although statistics focus on the latter.

Figure 3.7
Measures of job quality, among all employed graduates



Specifically, and not surprisingly, graduates employed part-time were significantly more likely to consider themselves overqualified for their job (38%) and significantly less likely to say that their 2003 degree helped them to obtain their job (60%) than were graduates employed full-time (percent who felt they were overqualified: 19%; percent reporting that the program helped them to their obtain job: 78%). Graduates employed part-time were also significantly less likely to be using skills from their 2003 degree (62%; full-time: 83%) and to be employed in a position that is somewhat or closely related to the 2003 program (59%; full-time: 82%).

To reduce the impact of differences that are the result of the type of employment held (i.e., full-time vs part-time) or previous work experience, differences by program orientation were examined exclusively for first-degree holders employed full-time.

Graduates of Applied/Professional programs were significantly more likely than those from Liberal Arts & Sciences programs to respond positively on measures of job quality: 87% reported that their job was somewhat or closely related to their 2003 degree (Liberal Arts & Sciences: 62%); 85% reported that their 2003 degree helped them to some or a great extent to obtain the job (Liberal Arts & Sciences: 72%); and 84% reported that they were using skills acquired in their 2003 degree to some or a great extent in their current job (Liberal Arts & Sciences: 71%).

Given the relatively short amount of time between graduation and the two-year-out survey, it is reasonable to think that first-degree holders of Applied/Professional programs may be better equipped to find employment related to their field of study because, by definition, these graduates receive occupation-specific training. Liberal Arts & Sciences graduates, on the other hand, obtain skills that can be used in several jobs but for which a specific occupation may not be as easily identified (in job titles, for example). As was noted in Chapter 1, first-degree holders who completed Liberal Arts & Sciences programs were also significantly less likely to have completed work placements as part of their degree or other employment-related exposure that could potentially help with seeking out a job after graduation.

For the Class of 1999 a similar trend had been observed by program orientation, but the gap was greater in both measures. In *Five Years On: A Survey of 1999 Maritime University Graduates*, it was noted that two years after graduation (i.e., in 2001) 53% of Class of 1999 Liberal Arts & Sciences graduates and 86% of Class of 1999 Applied/Professional graduates (first-degree holders) reported that their job was at least somewhat related to their program, and 57% of Liberal Arts & Sciences and 82% of Applied/Professional graduates reported that they were using their skills to some or a great extent. Comparing these statistics to figures three years later, *Five Years On* showed that differences by program orientation had narrowed over time (Job was somewhat or closely related to the 1999 degree - Liberal Arts & Sciences: 65%; Applied/Professional: 88%. Using skills obtained in the 1999 degree to some or a great extent - Liberal Arts & Sciences: 68%; Applied/Professional: 84%).

In the three years between interviews, little had changed for first-degree holders who completed Applied/Professional programs, but Liberal Arts & Sciences graduates made gains of approximately 10 percentage points on most measures. This increase was associated with their increased success in finding jobs requiring advanced skills. For the 2003 cohort, Liberal Arts & Sciences graduates have already made significant gains in securing jobs requiring advanced skills: in fact when compared to the previous Class, the proportion of graduates in advanced-skill positions is closer to that of the Class of 1999 five years after graduation, than it is at the two-year-out mark. Once again, the difference in interview timing will have contributed to these gains. Data for the Class of 2003 must be monitored to determine whether gains continue over time for Liberal Arts & Sciences graduates.

Finally, it should be observed that the job quality measures listed in Figure 3.7 did not vary significantly by gender, family educational background, or (2005) region of residence.

Earnings

On average, the Class of 2003 graduates earned $39,212 annually[57] approximately four percent more than the average earnings of the general population in 2005[58] and of the Class of 1999 in 2001.[59] For first-degree holders, average annual earnings stood at $34,853, roughly equal to their Class of 1999 counterparts.[60]

Compared to those of the general population, the earnings of first-degree holders speak to the benefit gained by completing a university degree: nearly three times as many members of the Class of 2003 first-degree holders were under 25 years of age in 2005[61] yet they earned 92% of what, on average, the general population earned during the same year.

At the same time, however, significant differences exist among first-degree holders. The remainder of this section explores the earnings of several groups of graduates and concentrates on first-degree holders, again because they constitute a relatively homogeneous group.

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[57] See Appendix 1: Methodological Notes for information on wage-related data and analysis.
[58] Source: Statistics Canada, CANSIM Table 281-0044 (www40.statcan.ca/101/cst01/labr79.htm). Earnings were reported on a weekly basis ($728.17) and then multiplied by 52 to produce an annual figure ($37,865).
[59] Class of 1999 graduates earned $37,851 (in constant (2005) dollars) two years after graduation.
[60] Class of 1999 in 2001 first-degree holders earned $34,084 in constant (2005) dollars.
[61] Among all Canadian workers 15% were under 25 in 2005; of the Class of 2003 first-degree holders, 41% were under 25.

Gender

In March 2004, the MPHEC examined the extent to which gender-based wage gaps were evident for the Class of 1999 Maritime university graduates two years after graduation.[52] The research determined that the gender-based gap in earnings for Maritime graduates can be at least partly attributed to differences in average number of hours worked per week, field of study, and place of residence, but that, even when these factors had been taken into consideration, a gap in earnings remained. In the five-year-out survey of the same Class, the gender-based gap in earnings was revisited, and once again a gap in pay was observed.

For the Class of 2003 in 2005, the data show that women earned 93% of their male counterparts' average annual earnings (women: $33,952; men: $36,357) two years after graduation, an increase of 10 percentage points over the comparable percentage for the Class of 1999 in 2001. These gains are largely the result of differences in the type of occupations held by female graduates. Although there was no significant gender difference in the occupational skill level of the employed Class of 2003 first-degree holders, there had been a difference for the Class of 1999 in 2001. For that Class, 47% of women and 55% of men were employed in jobs that usually require a university education or are management positions. Whereas men's occupational skill level remained relatively the same for the Class of 2003 (57%), the proportion of women in jobs requiring advanced skills increased 15 percentage points between cohorts to 62%.[53]

Regardless of the change between cohorts, the data for both Classes suggest that a university degree acts as a type of social equalizer, since women earn a substantially lower proportion of men's earnings (just over 60%[54]) within the general population.

When the number of hours worked are taken into account, gender-based wage differences are all but eliminated. Earlier in the chapter it was noted that women were more likely than men to report being employed part-time; however, even when the analysis includes only full-time workers, the average number of hours worked per week continues to be significantly different by gender. Comparing average annual earnings ignores this difference. However, on an hourly basis, Class of 2003 first-degree holders earned the same average wage: that is to say, there is no significant difference between the average earnings of women and men.[55]

Parental educational attainment

A university degree may also act as a social equalizer among graduates from the various family educational backgrounds. Two years after graduation, there was no significant difference in the average annual earnings of employed graduates within each parental educational attainment category. This same finding holds when comparing both the average hourly wages and only the average annual or hourly wages of full-time workers.

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[52] Maritime Provinces Higher Education Commission. (March, 2004). The Gender Gap in Employment Outcomes of University Graduates. *Trends in Maritime Higher Education*. 3(1). MPHEC. Fredericton, NB.

[53] As was noted earlier, some of the difference in the proportion of graduates in occupations requiring advanced skills may be the result of the timing of the survey. This same factor could be affecting apparent gains in the occupational skill level and earnings of women across cohorts, as women were more likely to have graduated from a Liberal Arts & Sciences program and to be employed as teachers.

[54] Female to male earnings ratio - 2001: 62.1%; 2004 (latest year available): 63.5%. Source: Statistics Canada, CANSIM Table 202-0102 (www40.statcan.ca.101/cst01/labor01a.htm).

[55] Full-time workers only - men and women: $17.49/hr; All workers – men: $18.30/hr; women: $18.01/hr.

Program orientation

Significant earnings differences were observed by orientation of the 2003 degree. In 2005, Liberal Arts & Sciences graduates earned 77% of the average annualized earnings of Applied/Professional graduates. In comparison to the previous Class, the gap in earnings has narrowed somewhat (from 74%), an expected change given the increased proportion of Liberal Arts & Sciences graduates working in jobs that require advanced skills (as described above).

Here again annualized wages fail to take into consideration the number of hours worked. Among first-degree holders, Liberal Arts & Sciences graduates reported significantly fewer hours worked per week and so the gap in earnings appears larger than would be the case if hourly wages were examined. Liberal Arts & Sciences graduates worked an average of 34 hours per week compared to 40 hours worked by Applied/Professional graduates. Part of this difference is the result of differences in full-time and part-time employment; however, the Liberal Arts & Sciences graduates employed full-time still worked approximately one hour less per week,[66] on average, than their Applied/Professional counterparts.

With respect to full-time, hourly wages of employed first-degree holders, on average Liberal Arts & Sciences graduates earned 84% of the wages of Applied/Professional graduates (Liberal Arts & Sciences: $15.89/hr; Applied/Professional: $18.84/hr). It was noted above that graduates of Applied/Professional programs were significantly more likely to be employed in jobs requiring advanced skills, thus an earnings differential is not surprising. The difference between groups, however, should be monitored to determine whether Liberal Arts & Sciences graduates "catch up" with their Applied/Professional counterparts over the longer term.

Region of residence

Region of residence also significantly affects earnings. Graduates living in the Maritimes in 2005 earned 86% ($33,167) of the annualized wages of their counterparts who were living outside the region ($38,623). And although graduates living outside the region reported more hours worked, the difference in wages did not change when only full-time, hourly wages were examined.

Among all employed first-degree holders, and among those employed full-time, significant differences were not observed in the earnings of Maritime residents by province.[67]

Occupational skill level

Two years after graduation, first-degree holders employed as managers or in jobs that usually require a university education enjoy higher earnings than those employed in other types of occupations. On an annualized basis, graduates working in jobs that do not usually require a university education earn 77% of the annual earnings of their counterparts in other types of jobs (does not usually require a university education: $29,395; usually requires a university education or management: $38,197). However, these graduates were also more likely to work part-time (25% of first-degree holders working in jobs that do not usually require a

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[66] Although small, this difference was statistically significant.

[67] *All employed first-degree holders* - Prince Edward Island: $16.66/hr; Nova Scotia: $16.85/hr; New Brunswick: $17.33/hr. *Full-time only* - Prince Edward Island: $16.46/hr; Nova Scotia: $16.28/hr; New Brunswick: $17.24/hr.

university education compared to 16% of first-degree holders working in management positions or jobs that usually require a university education) and to report significantly fewer hours worked per week (on average, first-degree holders employed in jobs that do not usually require a university education worked 35 hours per week compared to the average 38 hours per week worked by graduates in management positions or jobs that usually require a university education).

In the case of full-time workers, a one-hour difference in the number of hours worked was observed.[68] On an hourly basis, graduates employed in jobs that usually require a university education or in a management position earned 26% more than those in other types of occupations.[69] This difference was statistically significant and is similar to differences observed for the Class of 1999 in 2001.

Table 3.3 below summarizes the earnings of full-time employed first-degree holders.

Table 3.3
Earnings expressed as hourly wages among first-degree holders employed full-time, by selected characteristics

	n	Average hourly wage (2005)
Gender		
Women	841	$17.49
Men	527	$17.49
Ratio: women/men		*100%*
Parental Educational Attainment		
High school diploma or less	290	$17.68
PSE below Bachelor's degree	473	$17.73
Bachelor's degree or above	567	$17.30
Ratio: HSD or less/BA or above		*102%*
Program Orientation		
Liberal Arts & Sciences	626	**$15.89**
Applied/Professional	741	**$18.84**
Ratio: Liberal/Applied		*84%*
Region of Residence		
Living in the Maritimes	958	**$16.65**
Living Outside the Maritimes	410	**$19.45**
Ratio: Maritimes/Outside Maritimes		*86%*
Occupational Skill Level		
Does not usually require a university education	508	**$15.02**
Usually requires a university education or management	830	**$18.93**
Ratio: not require univ./requires univ. or management		*79%*

bold print = statistically significant difference

[68] Although small, this difference was statistically significant.
[69] Calculation: (18.93 – 15.02)/15.02. To put it another way, graduates working in jobs that do not usually require a university education earn 79% of the hourly wages if graduates working in advanced skill positions (calculation: 15.02/18.93x100).

4 How do Graduates Finance their Post-Secondary Education?

This chapter examines how the graduates financed their education and compares the experiences of different groups of graduates. It explores not only financing for the 2003 degree but also for any further study. It also investigates the relationship between the debt incurred and monthly income to determine how the graduates are managing their student debt repayments.[70]

4.1 Graduates' Sources of Funding for Post-Secondary Education

When the graduates were asked to indicate their main sources of financing for the 2003 degree, the most common responses were government student loans, employment earnings, and parents, in that order. Graduates from families with lower levels of parental educational attainment were significantly more likely (39%) than their counterparts from more highly educated backgrounds (26%) to report government student loans as a main source of financing. In contrast, graduates from the most highly educated family backgrounds were nearly four times more likely to report that their parents were a main source of financing (28%; high school diploma or less: eight percent). When one considers that family educational background is a useful proxy for socioeconomic status, these findings are not unexpected.

Among first-degree holders the same sources were most often cited, although the order differed: namely, government student loans, parents, employment earnings.

Grants, bursaries, scholarships

In addition to these main sources of financing, 42% of graduates had received a scholarship, award, fellowship or prize based on their academic achievement and 23% a grant or bursary based on their financial need.[71] The average amount of total scholarships received was $5,728, while the average grant or bursary was $3,096. Among first-degree holders, averages were slightly lower.

The Class of 2003 graduates also had access to a new source of post-secondary funding. Between the graduating Class of 1999 and the graduating Class of 2003, the federal government established the Canada Millennium Scholarship Foundation. Announced in the 1998 budget speech as part of the Canadian Opportunities Strategy, the Canada Millennium Scholarship Foundation was designed "to support access to post-secondary education for all Canadians."[72] At that time the government committed an initial ten-year endowment of two and a half billion dollars, noting that through the 100,000 scholarships made available each year for the next ten years, low to middle income students would be able to access post-secondary education.

Since that time, many developments have occurred within the Foundation, including the launch of its initial bursary program as well as the implementation of other programs such as the Millennium Excellence Award

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[70] How graduates finance their university education and the impacts of student loan borrowing, have increasingly been the focus of post-secondary education-related research. Most recently, the Canada Millennium Scholarship Foundation released "Student debt: Trends and consequences" (preliminary chapter 5 of the forthcoming report, *The Price of Knowledge 2006-2007*) which noted that the extent of education-related borrowing is important to monitor as the "accumulation of thousands of dollars in loans can result in dropping out partway through studies or defaulting in the years following graduation."

[71] Among first-degree holders, these percentages increase slightly - scholarship, award, fellowship or prize based on academic achievement: 48%; grant or bursary based on financial needs: 25%.

[72] The 1998 Federal Budget Speech. February 1998. (www.fin.gc.ca/budget98/fact/millfte.html)

Program, Millennium Access Bursaries and the Millennium Research Program.[73] Of these, however, the bursary remains the cornerstone of the Foundation's student support and represents 95% of its endowment. The first bursaries were distributed in January 2000 (thus graduates of the Class of 1999 were not eligible for this assistance for their 1999 degree), and among graduates who borrowed from government, 38% received a Canada Millennium Scholarship,[74] with an average of $3,617 awarded.[75] If successful in one of the Maritime provinces, the bursary was applied directly to the student's government loan in order to reduce the amount to be repaid following graduation/withdrawal from the program.[76]

Given that the award is granted to students who are assessed to have the most need, it is not surprising to learn that nine out of ten Class of 2003 graduates who received a Canada Millennium Scholarship borrowed $15,000 or more to finance their 2003 program. Graduates whose parents' highest level of educational attainment was a high school diploma or less and women graduates were significantly more likely to have received a Canada Millennium Scholarship. Among first-degree holders, the difference by family educational background remains statistically significant; the difference by gender does not. These trends follow government borrowing patterns, since these groups of graduates were more likely to borrow in the highest ranges.

Borrowing for the 2003 degree[77]

At graduation, 60% of all graduates and 65% of all first-degree holders had borrowed from at least one source to finance their education. Among first-degree holders the incidence of borrowing increased six percentage points between the 1999 and 2003 Classes, while the proportion of borrowers for the Class of 2003 as a whole remained the same: incidence of borrowing among Class of 1999 graduates, whether examining frequencies for first-degree holders or for the Class as a whole, was 59%.

Those graduates whose parents' highest level of educational attainment was a Bachelor's degree or above were significantly less likely to report that they borrowed for their 2003 program. For first-degree holders this was even more the case: 55% of graduates from the most highly educated backgrounds borrowed, compared to 76% of those whose parents' highest level of education was a high school diploma or less.

Those graduates who lived outside the Maritimes prior to enrolling were also less likely to report borrowing for the 2003 degree (Outside Maritimes: 55%; Maritimes: 62%). These differences are partly the result of differences in parental educational attainment, since graduates from outside the Maritimes were more likely to come from the most highly educated family backgrounds.[78] A significant difference remains among those whose parents' highest level of education was a high school diploma or less, since graduates from outside the region were significantly less likely to have borrowed (Maritimes: 63%; Outside Maritimes: 49%).

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[73] For more detail on any of these or other programs associated with the Canada Millennium Scholarship Foundation visit their website at: www.millenniumscholarships.ca

[74] In the survey, graduates were not asked what type of Canada Millennium Scholarship they had been awarded; however, given that the Millennium Bursary accounts for nearly all awards provided by the Foundation, it is assumed, for the purposes of this analysis, that the Millennium Bursary was received. The survey question was: "Did you receive a Canada Millennium Scholarship?"

[75] In New Brunswick and Prince Edward Island the bursary ranges from $2,000 to $4,000; in Nova Scotia the range is $2,000 to $3,000 (www.millenniumscholarships.ca/en/recipients/brunswick.asp; www.millenniumscholarships.ca/en/recipients/edward.asp; www.millenniumscholarships.ca/en/recipients/scotia.asp).

[76] This is not the same in all provinces. In Ontario, for example, the Millennium Bursary is paid to students as a cash grant.

[77] See Appendix 1: Methodological Notes for information on student loans data.

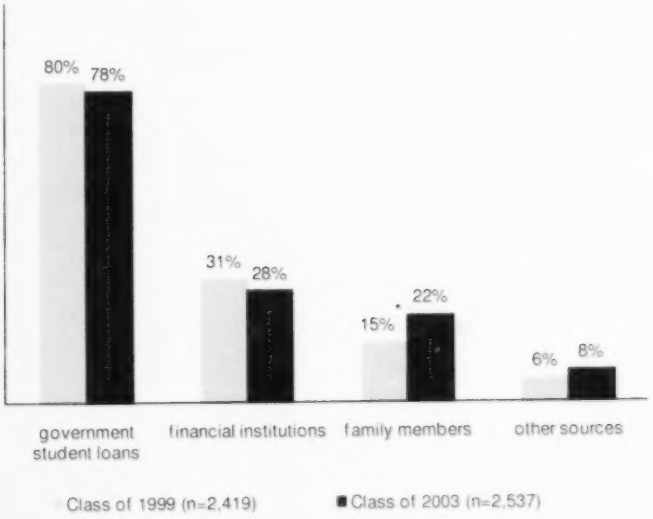
[78] Distribution of family educational background: *Among those who lived in the Maritimes prior to enrolling* - high school diploma or less: 27%; PSE below Bachelor's degree: 34%; Bachelor's degree or above: 39%. *Among those who lived outside the Maritimes prior to enrolling* - high school diploma or less: 19%; PSE below Bachelor's degree: 28%; Bachelor's degree or above: 53%.

There were no significant differences in the incidence of borrowing by gender, program orientation, province of university, or, within the Maritimes, province of residence twelve months prior to enrolling. There was, however, a significant difference in borrowing between first-degree holders (65%) and other graduates (55%), and the findings by family educational background and region of residence were consistent with those found at the Class level.

Source of borrowing

Graduates have a number of sources to draw upon for student loan assistance. Most used government student loan programs; but other sources were also drawn upon. Figure 4.1 shows the proportion of Class of 1999 and Class of 2003 borrowers who used each loan source to finance their study. Clearly, government student loans continue to be the most common source of financing, with eight out of ten graduates having borrowed from this source in both Classes. Fewer Class of 2003 graduates borrowed from financial institutions than was the case for the Class of 1999 (Class of 1999: 31%; Class of 2003: 28%), while a significantly greater proportion borrowed from parents or other family members (Class of 1999: 15%; Class of 2003: 22%). These distributions are similar to those evident among first-degree holders.[79]

Figure 4.1
Among borrowers, the incidence of borrowing for the 1999 or 2003 degree, by source



* statistically significant difference
Note: graduates could borrow from more than one source therefore percentages do not total 100.

[79] Although for first-degree holders there was a larger gap in the proportion from each Class that borrowed from financial institutions (Class of 1999: 34%; Class of 2003: 27%).

Since the Class of 2003 included a greater proportion of graduates from higher parental educational backgrounds (a proxy for family income), it is not surprising to see a higher percentage borrowing from family members. However, one might be surprised to learn that fewer 2003 borrowers turned to banks and other financial institutions to finance their post-secondary education. Changes in government student assistance policies and rising tuition fees need to be included in the analysis here.

In the mid-1990s, student loan policies (at the federal and provincial levels) were revised so that eligible students could borrow more and more students would be eligible to borrow.[80] Over the 1990s, Maritime university tuition fees also rose dramatically, doubling from an average of $1,897 in 1990-1991 to $3,786 in 1999-2000.[81] Between 1999-2000 and 2004-2005, tuition fees rose by an additional 30% to $4,912. With increased costs (tuition, as well as other costs not explored here - e.g., residence, meals, books and supplies) and access to higher loan amounts, some graduates who might not have been eligible to borrow prior to these changes, and thus would have turned to financial institutions for student loan assistance, would now have qualified for government student loans.[82]

If one focuses on first-degree holders and examines the data for first-time borrowers only, the data from the survey suggest that these changes may have resulted in a larger pool of eligible borrowers, since there was a greater increase in the percentage of graduates from the highest parental educational attainment group, a proxy for family income, who reported borrowing solely from government sources.[83] An examination of the incidence of borrowing from government sources and/or from financial institutions revealed that the proportion borrowing solely from government increased among first-degree holders who have the lowest level of parental educational attainment (Class of 1999: 72%; Class of 2003: 77%). At the same time this particular increase was more pronounced for borrowers whose parents obtained a Bachelor's degree or above (Class of 1999: 55%; Class of 2003: 67%). The decrease in the percentage borrowing solely from financial institutions was also more pronounced for this group, and roughly equal to their government borrowing increase (10 percentage points between Classes compared to a three point decrease for graduates with lower levels of parental educational attainment). Since parental educational attainment is a proxy for family income, these differences suggest that more graduates from higher income families (i.e., parental educational attainment of a Bachelor's degree or above) may have been eligible to borrow from government than had been the case for the Class of 1999.

The proportion of first-degree holders borrowing from both government and financial institutions decreased one to two percentage points between Classes within each of the parental educational attainment categories.

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[80] In 1994-1995 maximum Canada student loan borrowing amounts were raised from $106/week to $165/week for eligible students. At approximately the same time, Maritime provincial policies also underwent change, and they moved away from non-repayable grants and bursaries to loans: New Brunswick's bursary program was replaced with a loan/bursary program; Nova Scotia moved from a provincial bursary program to a provincial loan program; and Prince Edward Island adopted a student aid program similar to that of Nova Scotia.

[81] These figures refer to full-time undergraduate Arts & Sciences tuition fees. Source: Maritime Provinces Higher Education Commission Tuition Survey, relevant years.

[82] In August 2005, Canada student loan limits were again increased, from a maximum of $165 per week of study to a maximum of $210 per week of study. These changes create even higher student loan limits for those who enrol in post-secondary education after this date.

[83] Note: incidence of borrowing from family and other sources were excluded from the analysis.

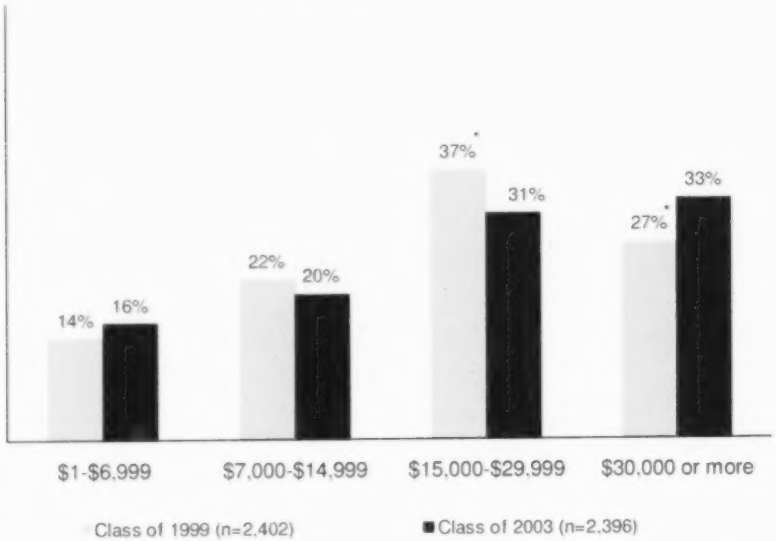
4.2 The Extent of the Debt of Graduates

Average amounts borrowed

Since government student loans were the main source of borrowing for the 2003 degree, it is not surprising to learn that the average amount borrowed was highest from this source ($21,757; financial institutions: $13,964; family: $7,512; other: $11,772).[84] However, to more fully understand graduates' debt, it is informative to look at borrowing from all sources.

When all sources are combined, the Class of 2003 graduates who borrowed for their degree borrowed, on average, $23,337 (first-degree holders: $23,008), over $2,000 more than the $20,918 (first-degree holders: $21,136) borrowed by the Class of 1999.[85] This increase was the result of a shift in borrowing in the highest ranges. Whereas fairly equal proportions of graduates borrowed in the lowest ranges between the two cohorts (14-16%, 22-20%), Figure 4.2 shows a marked shift from the $15,999 to $29,999 range (Class of 1999: 37%; Class of 2003: 31%) to the $30,000 or more range (Class of 1999: 27%; Class of 2003: 33%).[86]

Figure 4.2
Amount borrowed for the 1999 or 2003 degree, all sources combined, by range



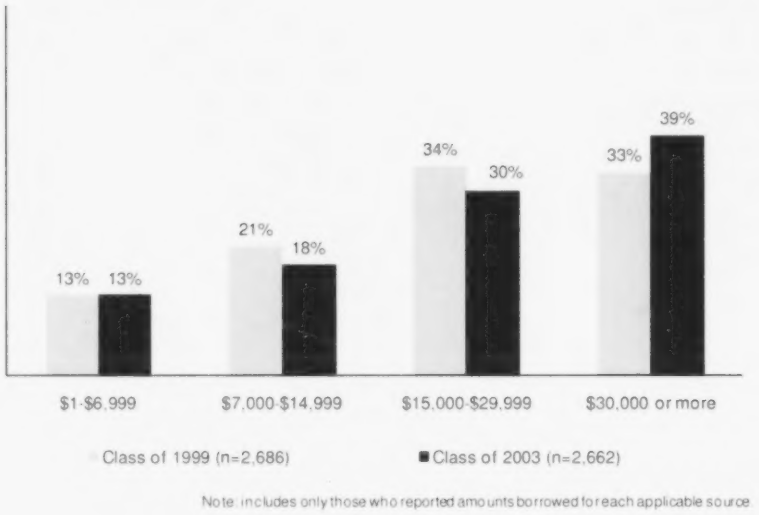
* statistically significant difference
Note: includes only those who reported amounts borrowed for each applicable source.

[84] First-degree holders - government: $22,140; financial institutions: $12,203; family: $7,911; other: $9,512.
[85] See Appendix 1: Methodological Notes for information on analysis of student loan data.
[86] With a similar trend among first-degree holders. *Class of 1999* - $1-$6,999: 14%; $7,000-$14,999: 19%; $15,000-$29,999: 39%; $30,000+: 28%. *Class of 2003* - $1-$6,999: 15%; $7,000-$14,999: 18%; $15,000-$29,999: 31%; $30,000+: 36%.

In addition, as was noted in Chapter 3, many Class of 2003 graduates chose to pursue further study. By 2005, 67% of all graduates had borrowed, an increase of seven percentage points since graduation (first-degree holders: 75%, an increase of 10 percentage points since graduation), and the average amount borrowed rose to $27,104 (first-degree holders: $27,534) - nearly $4,000 more than the average borrowed at graduation and over $3,000 more than the Class of 1999 in 2001 ($23,735; first-degree holders: $24,816).[87]

Figure 4.3 shows that, as was the case with borrowing for the 1999 or 2003 degree alone, the proportion of graduates borrowing in the lowest ranges by 2005, from a cumulative perspective, did not change; yet, borrowing in the highest ranges did. For the Class of 1999 in 2001, equal proportions of graduates borrowed $15,999 to $29,999 (34%) and $30,000 or more (33%) to finance their 1999 degree and/or further education. By contrast, the Class of 2003 borrowers were more likely to borrow in the highest range, with 30% having borrowed $15,000 to $29,999 and 39% having borrowed $30,000 or more to finance their 2003 degree and/or further study.[88]

Figure 4.3
Amount borrowed for the 1999 or 2003 degree and/or further study, all sources combined, by range



Note: includes only those who reported amounts borrowed for each applicable source.

Figure 4.3, however, tells only part of the story. Between 2001 and 2005 inflation resulted in a 9.31% change in the value of the dollar.[89] As a result, the 2001 amounts appear lower than they would be in truly comparable terms. When one compares the Classes of 1999 and 2003 borrowing amounts in constant (2005) dollars, the difference in heavy borrowing (i.e., $30,000 or more) is reduced (Class of 1999: 36%; Class of 2003: 39%) as is the difference in average borrowing (Class of 1999: $25,945; Class of 2003: $27,104).[90]

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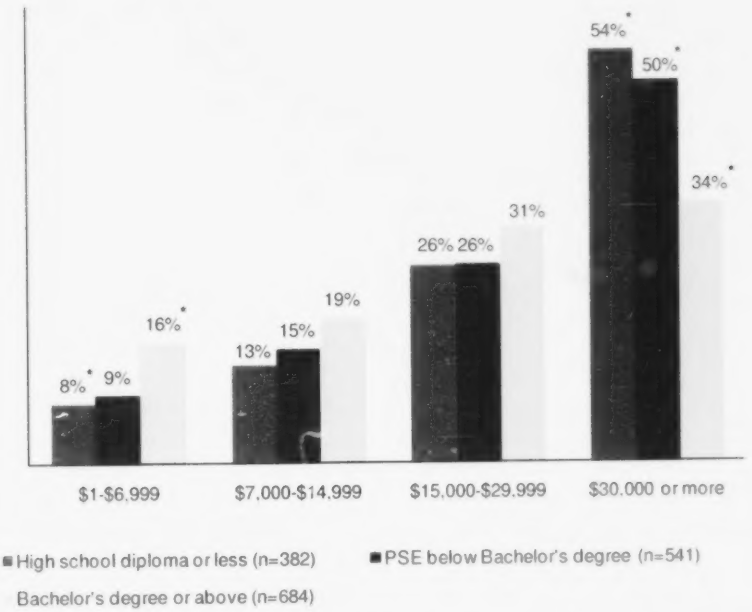
[87] Incidence of borrowing for the Class of 1999 in 2001 - whole class: 65%; first-degree holders: 71%.
[88] Among first-degree holders: *Class of 1999* - $1-$6,999: 11%; $7,000-$14,999: 18%; $15,000-$29,999: 35%; $30,000+: 36%. *Class of 2003* - $1-$6,999: 12%; $7,000-$14,999: 16%; $15,000-$29,999: 28%; $30,000+: 44%.
[89] http://www.bankofcanada.ca/en/rates/inflation_calc.html - September 2006.
[90] Among first-degree holders - Class of 1999: $27,126; Class of 2003: $27,534.

The remainder of this section explores student loan amounts using constant (2005) dollars for the Class of 1999 data. By doing this, the comparisons between the Classes will more accurately identify areas of change and continuity.

Among first-degree holders, significant differences were observed in the average amounts borrowed by parental educational attainment (a proxy for family income). In 2005, 2003 graduates whose parents' highest level of educational attainment was a high school diploma or less borrowed $32,123 on average to finance their 2003 degree and/or further study - over $8,000 more than the average amount borrowed by those from the most highly educated family backgrounds (Bachelor's degree or above: $23,945). In comparison to the previous Class, the average amount borrowed by graduates with the lowest level of parental educational attainment increased nearly $2,500 (Class of 1999 in 2001: $29,672 in constant dollars), whereas the average amount borrowed did not increase between Classes for graduates from other family educational backgrounds, despite an increase in the proportion of these graduates who reported borrowing.[91]

First-degree holders with lower levels of parental educational attainment were significantly more likely to have borrowed in the highest range ($30,000 or more) than were graduates from the most highly educated families (Figure 4.4); there is a difference of 20 percentage points between the groups (percent of borrowers who borrowed $30,000 or more - high school diploma or less: 54%; Bachelor's degree or above: 34%).

Figure 4.4
Amount borrowed for the 2003 degree and/or post-2003 studies, by range and family educational background



* statistically significant difference
Note: includes only those who reported amounts borrowed for each applicable source.

[91] *Incidence of borrowing for the 1999 degree and/or further study by parental educational attainment* - high school diploma or less: 78%; PSE below Bachelor's degree: 72%; Bachelor's degree or above: 62%. *Incidence of borrowing for the 2003 degree and/or further study by parental educational attainment* - high school diploma or less: 81%; PSE below Bachelor's degree: 76%; Bachelor's degree or above: 71%.

The majority of this difference was the result of borrowing for the first degree[92] as significant differences were not observed in range of amounts borrowed for post-2003 study alone.[93]

Post-2003 study does become a factor, however, when one considers differences in borrowing by program orientation and by gender. From the information provided in Chapter 3, one would expect that first-degree holders who graduated from Liberal Arts & Sciences programs would be more likely to borrow than Applied/Professional graduates since they were more likely to have pursued further study, and this was indeed the case. Although on equal footing at graduation, by the two-year-out mark Liberal Arts & Sciences graduates were significantly more likely to borrow (Liberal Arts & Sciences: 77%; Applied/Professional: 72%) and, on average, had borrowed 16% more than their Applied/Professional counterparts (Liberal Arts & Sciences: $29,276: Applied/Professional: $25,203).[94]

By gender, women ($28,482) borrowed over $2,500 more for their post-secondary education than did men ($25,859).[95] This difference is tied to the fact that women were more likely than men to have graduated from a Liberal Arts & Sciences program, and graduates of these programs were more likely to have pursued further study, and borrowed to have done so.[96]

Average amounts owing

With the average debt reaching nearly $30,000 and 40% of graduates who have borrowed borrowing more than $30,000, Maritime university graduates have borrowed a considerable amount of money that has to be repaid. By two years after graduation, over two-thirds of graduates had started to repay these debts and, as a result, had reduced the average amount outstanding by approximately 13%, to $20,219 (first-degree holders owed $21,126, a decrease of eight percent).[97]

Figure 4.5 shows the amounts outstanding two years after graduation, by range, among the Classes of 1999 and 2003 borrowers. Most worthy of note is the increase between Classes in the percentage reporting that their loans have been repaid in full: while 11% (first-degree holders: nine percent) of Class of 1999 graduates had fully repaid their debt by 2001, 17% (first-degree holders: 15%) of Class of 2003 graduates repaid their loans in full by 2005.

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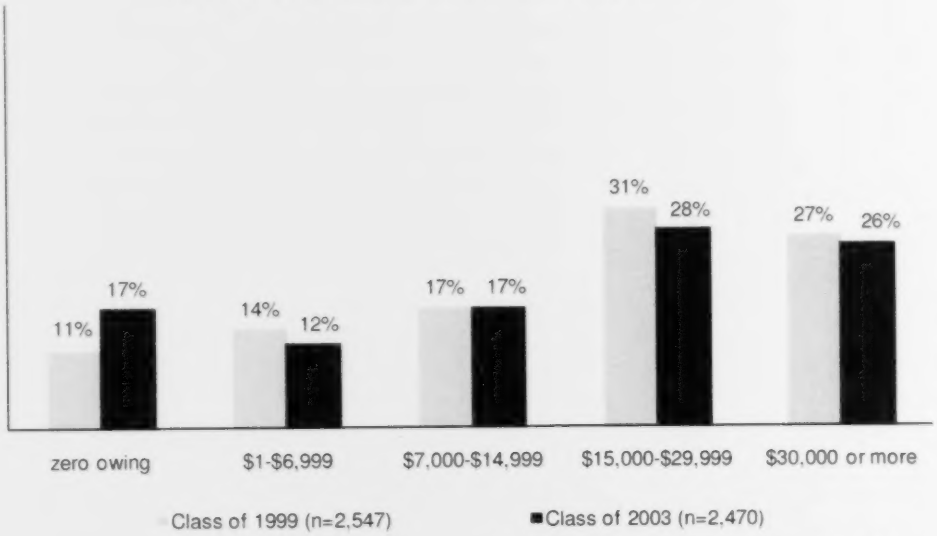
[92] Percent who borrowed $30,000 or more - High school diploma or less: 46%; Bachelor's degree or above: 26%.
[93] For those who returned to study and who had borrowed when doing so. It is important to note that for post-2003 education, graduates from all family educational backgrounds would be considered independent students, thus reducing or eliminating the role of family income (of which parental educational attainment is a proxy) in eligibility for government student loans (the main source of financing).
[94] Among all borrowers in the Class the averages borrowed were: Liberal Arts & Sciences: $28,332; Applied/Professional: $26,142.
[95] Among all borrowers in the Class the averages borrowed were: Women: $27,828; Men: $25,732.
[96] Among those who returned to study, 67% of first-degree holders in the Liberal Arts & Sciences, and 43% of Applied/Professional first-degree holders, borrowed for their post-2003 program.
[97] See Appendix 1: Methodological Notes for information on analysis of student loans data.

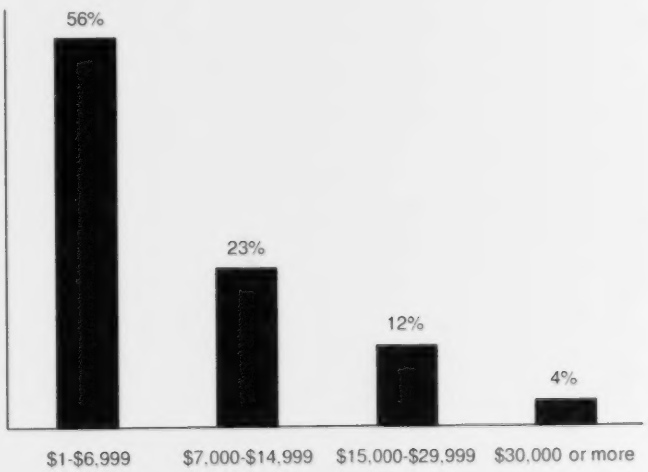
Figure 4.5
Amount owing two years after graduation on student loans borrowed to finance the 1999 or 2003 degree and/or further study, by range



Note: Class of 1999 amounts are in constant (2005) dollars; includes only those who reported borrowing and owing amounts for each loan source.

The most significant factor in whether a graduate repaid his/her loans in full was the amount of money borrowed. Figure 4.6 shows that, as might be expected, those graduates who borrowed the least were most likely to have completely repaid their loans.

Figure 4.6
Proportion of borrowers who completely repaid their loans by 2005, by borrowing range



The fluctuations in interest rates may explain some of the differences in full repayment across cohorts. Interest rates were lower for the Class of 2003 at graduation than they had been for the Class of 1999 (1999 – low: 6.25%; high: 6.75%; 2003 – low: 4.50%; high: 5.0%). Since many graduates (i.e., government student loan recipients) would not have to begin repaying their debt until six months after graduation, the difference in interest rates could have been even greater, as rates reached a high of 7.5% in 2000 and a low of 3.75% in 2004.[98]

In the case of first-degree holders, average amounts outstanding differed significantly by program orientation (Liberal Arts & Sciences: $24,143; Applied/Professional: $17,034), gender (women: $22,076; men: $19,496) and parental educational attainment (high school diploma or less: $25,496; PSE below Bachelor's degree: $21,886; Bachelor's degree or above: $18,056). These differences reflect significant differences in average amounts borrowed for the 2003 degree and/or further education.[99]

4.3 Balancing Debt and Earnings

Some borrowers, notably those who borrowed less than $7,000, have managed their debt well; however, for others, debt management is a struggle. In this section we investigate how borrowers manage their debt by focusing specifically on graduates actively engaged in repayment. To determine the relative impact of these loans on graduates' financial "success" two years after graduation, the debt-to-earnings ratio is explored.

The debt-to-earnings ratio is calculated by dividing the sum of monthly loan payments (for all education-related loans from government or financial institutions in all periods covered by the survey[s]) by (gross) monthly employment income. Therefore, in the interpretation of these statistics, it is important to keep in mind that, by definition, several groups of graduates are not included in these calculations: those who are not working (and so have no earnings); those who have not yet begun to repay their loans; and those who have repaid their loans in full. Also excluded are those who reported that their loan payment included payments for other debts,[100] such as personal and car loans or education-related loans for programs completed prior to 2003 (or 1999 for data from the previous cohort), and those who did not know or who refused to report their loan payments and/or income. Finally, information on debts other than student loans, and debt payments on education-related loans from family and other sources, is not collected in the survey; therefore, total personal debt status is not known.

In 2005, the Class of 2003 borrowers actively in repayment paid an average of $310 per month toward education-related debt, with this amount varying considerably according to the total amount of money borrowed. In relation to monthly earnings, the monthly student loan payment resulted in an average debt-to-earnings ratio of 11%; the same was the case for the Class of 1999 in 2001 (Table 4.1).

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[98] For government student loans, the National Student Loan Service Centre's Loan Repayment Calculator uses a floatable interest rate of prime +2.5% and a fixed interest rate of prime +5% to calculate the amount to be repaid for government student loans (http://srv650.hrdc-drhc.gc.ca/cslp-pcpe/cl/30/lrc-crp/nlindex.jsp?langnslsc en). Figures in this paragraph reflect the prime interest rate as posted on the Bank of Canada website (www.bankofcanada.ca/cgi-bin/famecgi-fdps). These figures can also be found in tabular format by year and month (1996-2006) on the Government of Canada website: http://canadianeconomy.gc.ca/english/economy/prime.cfm.

[99] When one focuses solely on first-degree holders who did not return to study, significant differences were found in the range of amount owing by family educational background and by gender; these findings are expected given that the groups who owe more (women, graduates from lower family educational backgrounds) were also the groups who borrowed more for their first degree. No significant differences were found by program orientation among this group as the pursuit of further study had resulted in significant differences in borrowing.

[100] For the Class of 1999 in 2001, this question was asked only for the 1999 degree; therefore, it was not possible to exclude cases where post-99 payments might have included other loans.

Table 4.1
Debt-to-earnings ratio for all debt accumulated for the 1999 or 2003 degree and/or further study, Classes of 1999 and 2003, by selected characteristics

	Class of 1999 in 2001 (n=1,093) (%)	Class of 2003 in 2005 (n=912) (%)
Overall	11	11
Gender		
Male	**11**	**10**
Female	**12**	**11**
Parental Educational Attainment		
High school diploma or less	11	11
PSE below Bachelor's degree	12	10
Bachelor's degree or above	11	10
Program Orientation		
Liberal Arts & Sciences	**13**	**12**
Applied/Professional	**10**	**10**
Province of (Current) Residence		
PE	12	***
NS	12	11
NB	11	11
Outside Maritimes	11	10

bold print denotes statistically significant difference within the Class

*** = cell size too small for reliable analysis (n<50)

The data in Table 4.1 reveal that women and graduates of Liberal Arts & Sciences programs devoted a higher proportion of their earnings to their monthly student loan payment than did their male and Applied/Professional counterparts. Debt-to-earnings ratios were similar among first-degree holders; however, differences by family educational background were greater and statistically significant for Class of 2003 first-degree holders (high school diploma or less: 12%; PSE below Bachelor's degree: 11%; Bachelor's degree or above: 9%).

According to research by King and Bannon (2002)[101] and Baum and O'Malley (2003),[102] student debt payments exceeding eight percent of a graduate's income are considered to be unmanageable or at least to cause difficulty. This threshold was tested and supported for the Class of 2003.[103] Among borrowers in repayment, 30% (first-degree holders: 33%) reported that they had difficulty in meeting their repayment obligations. And graduates above the eight percent threshold (all graduates: 37%; first-degree holders: 41%) were significantly more likely than those below (all graduates: 19%; first-degree holders: 15%), to have reported difficulty.

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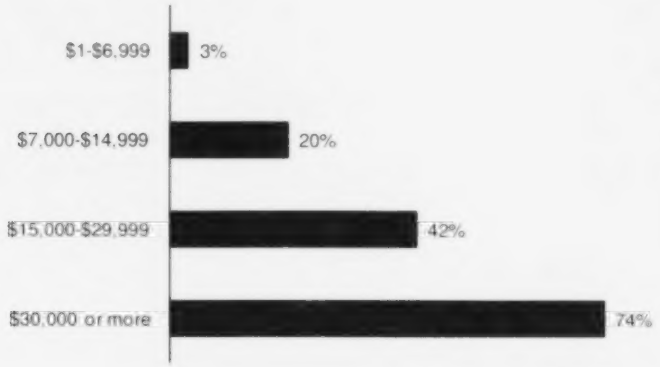
[101] King, T. and Bannon, E. (2002). *The Burden of Borrowing: A Report on the Rising Rates of Student Debt*. The State Public Interest Groups' Higher Education Project.

[102] Baum, S. and O'Malley, M. (2003). *College on Credit: How Borrowers Perceive their Education Debt. Results of the 2002 National Student Loan Survey*. Nellie Mae Corporation.

[103] We used graduates' experiences with the repayment of their government student loan for the 2003 degree as a proxy for student loan difficulty as a whole.

If the eight percent debt-to-earnings ratio is used as a measure, 51% of graduates who borrowed (first-degree holders: 54%) have unmanageable student loan payments, and there are striking differences by borrowing range (Figure 4.7).

Figure 4.7
Proportion of borrowers in repayment who exceed the eight percent debt-to-earnings threshold, by borrowing range



Recently, it has been argued that the "eight percent rule" is not an accurate measure of the amount of debt students can manage after graduation. In their review of possible approaches for benchmarking reasonable student debt levels, Schwarz and Baum (2006)[104] conclude "that the vague concept that monthly payments are manageable if they do not exceed eight percent of income is not an acceptable basis for making policy decisions in this area." For various reasons based on their literature review, they conclude that there can be no single benchmark for the amount of debt students can repay without experiencing financial difficulty; however, "it is important that some reliable benchmarks be developed both to guide students and to provide a sound basis for the development of loan forgiveness and income-sensitive repayment programs."

They propose a set of (Canadian and American) benchmarks whereby, as pre-tax income increases, so too does the proportion of that income that can be manageably devoted to student loan payments. Using these alternative debt manageability benchmarks confirms that the way in which current repayment systems are set up is indeed more advantageous for graduates with higher earnings than those who earn less because the repayment amount is based on the size of the loan. However, even when these benchmarks are used, one in three borrowers in repayment (all graduates: 31%; first-degree holders: 34%) exceeded their threshold, and low income earners are, not surprisingly, most likely to have done so.

[104] Schwarz, S. and Baum, S. (2006). *How Much Debt is Too Much? Benchmarks for Manageable Student Debt in Canada and the United States*. http://www.carleton.ca/spa/CruiseConference/University/Canadianized20060929.pdf

In order to ensure graduates are able to repay their loans, and avoid instances of default, bankruptcy and the like, governments (and possibly other loan providers) may find it worthwhile to reconsider their current repayment system. For although there are some income contingent programs in place, such as Interest Relief[105] and Debt Reduction in Repayment programs,[106] in the end, whether one uses the "eight percent rule" or the more staggered series of benchmarks noted above, graduates who borrow continue to experience difficulty repaying their debt, and a significant proportion of borrowing and consequent repayment exceed what is considered manageable.

Moreover, although Interest Relief and Debt Reduction in Repayment programs help graduates with student loan repayment, Commission surveys repeatedly show a lack of awareness of these types of programs among graduates. With the implementation of the Canada Millennium Scholarship Foundation's bursary program more graduates are getting assistance without having to seek it out,[107] but some available options are likely underutilized. Among graduates who have government student debt for the 2003 degree, only 27% were aware of any government programs that help graduates repay these debts,[108] and only 31% of those who experienced difficulty were aware of such programs. It seems then that, although governments have implemented programs designed to help those in financial difficulty, many of the people who need these programs are unaware of their existence. Communication of what is available for students facing challenges managing their debt is required.

4.4 Graduates' Assessment of the Personal and Financial Worth of their Education

Graduates were asked to reflect on their university education and their subsequent experiences and to indicate the extent to which they felt that their university experience was worth: (a) the personal investment of time required for classes and studies and (b) the financial investment required. On both measures, graduates judged that their university experience was indeed worth the investment: nine out of ten (87%) agreed that it was worth the personal investment and just over three quarters (76%) agreed that it was worth the financial investment.[109] Removing neutral cases, these percentages are even higher as 96% judged that it was worth the personal investment, and 90% the financial investment, that was required.

With regard to the worth of the personal investment of time required for classes and studies, there was no significant difference by gender, program orientation, province of university, family educational background, prior region of residence, borrowing status, or borrowing range (among the Class as a whole or only first-degree holders). There was, however, a statistically significant difference in the proportions of graduates who judged that their university experience was worth the financial investment required.

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[105] "Interest Relief is a program designed to provide temporary relief for borrowers who have difficulty repaying their Canada Student loans. The borrower is not required to make any payments on the loan and the federal government pays the interest. Applicants are normally approved for six-month periods up to a maximum of 30 months." (http://www.canlearn.ca/en/support/help/glossary/interest_relief.shtml)

[106] "Debt Reduction in Repayment (DRR) is a debt-management measure designed to help [graduates] manage the repayment of their Canada Student Loans if [they] have long-term financial difficulties. DRR lowers the principal amount of [the] loan and reduces [graduates'] monthly loan payment to an affordable level based on ...family income...[A graduate can] receive up to three reductions on [their] loan principal...for a total of up to $26,000, depending on [their] financial circumstances."
(http://www.canlearn.ca/en/shared/pay/repay/NL/ft/public/obtain_assistance/debt_reduction_repayment.shtml)

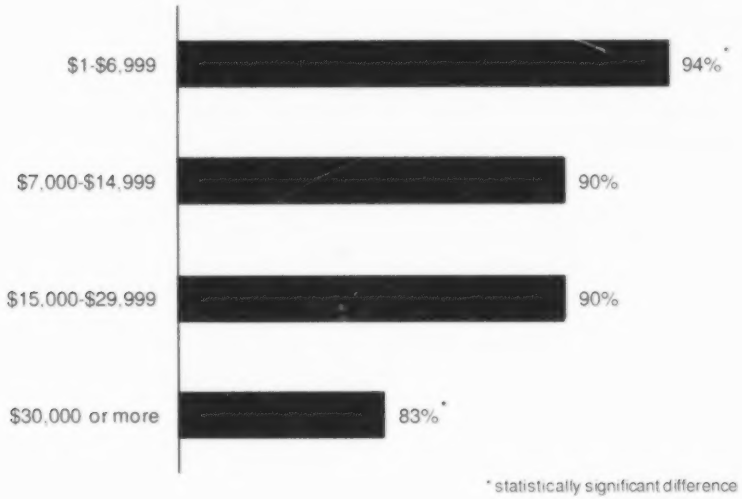
[107] As indicated earlier in the chapter, students who apply for government student financial assistance are automatically considered for bursaries provided by the Canada Millennium Scholarship Foundation.

[108] A similar proportion were aware of these programs when examining statistics for those who borrowed from government for the 2003 degree and/or further education combined, for the Class as a whole and for first-degree holders.

[109] See Appendix 1: Methodological Notes for information on analysis of scale variables.

Those graduates who did not borrow to finance their 2003 degree and/or further education were significantly more likely (96%) than those who borrowed (87%) to say that their university experience was worth the financial investment.[110] An examination of the borrowing amounts by range (Figure 4.8) shows that there were differences among borrowers as well, as graduates who borrowed the least ($1-6,999: 94%) were significantly more likely than those who borrowed the most ($30,000 or more: 83%) to say that it was worth the financial investment.

Figure 4.8
Percent of borrowers who felt their university experience was worth the financial investment, by borrowing range



There was also a small, but statistically significant, difference in the graduates' assessment of the financial worth of the program when considered by program orientation (Liberal Arts & Sciences: 88%; Applied/Professional: 92%). This was mainly the result of differences in borrowing range.[111]

There was no significant difference in the proportions of graduates who judged that their university experience was worth the financial investment by gender, family educational background, province of university or prior region of residence.

Among first-degree holders, significant differences were repeated for borrowers (86%) and non-borrowers (95%); however, differences by amount borrowed were only significant among those who borrowed $30,000 or more. Contrary to the analysis for the Class as a whole, first-degree holders from the most highly educated families were significantly more likely to say that their university experience was worth the financial investment.

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[110] Note: excludes neutral cases. See Appendix 1: Methodological Notes for further information on the analysis of scale variables.
[111] Although there was still a significant difference in the percent who felt their education was worth the financial investment, by program orientation, among those who borrowed $30,000 or more - Liberal Arts & Sciences: 79%; Applied/Professional: 87%.

5 Conclusions and Implications

This chapter summarizes the central findings of the Survey of the Class of 2003 Maritime University Graduates and explores some of the potential policy implications of these data as well as areas for further research.

5.1 Half of All Graduates Chose to Pursue Further Study

Two years after graduating, half of all 2003 graduates had engaged in additional education. The most common program pursued by first-degree holders was a Bachelor of Education degree (25%) or a Master's/PhD program (26%). Among those most likely to pursue further education were graduates of Liberal Arts & Sciences programs and those whose parental educational attainment was a Bachelor's degree or above, and there was no significant difference by gender or by province of university. Notably, graduates who had borrowed for their 2003 degree were significantly less likely to have pursued further education.

The majority of graduates who pursued further study did so for job-related reasons. Data in Chapter 2 suggest the decision to pursue further study came before graduation, since most graduates, if given the opportunity to do it all over again, would choose to go to university, to attend the same institution and to complete their education in the same major field of study.

Further research, such as that currently underway in the Maritime universities,[112] will provide insight into the post-graduate intentions of Maritime university graduates and so will increase our understanding of when the decision to pursue further study is made and the influences and deterrents in the decision-making processes of graduates.

5.2 Maritime University Graduates Have Made a Successful Transition into the Labour Market

The Class of 2003 graduates have successfully made the transition from the "learning force" to the workforce. In 2005, graduates enjoyed high rates of employment, worked in jobs related to their degree and earned wages at or near the national average for the population as a whole. This represents a significant achievement, since many graduates had just entered the labour market (i.e., were under 25 years of age) and can be expected to improve their performance over time.

Although there was no significant difference in the occupational skill level of graduates by gender, family educational background, or region of residence, Applied/Professional graduates were significantly more likely than their Liberal Arts & Sciences peers to be working in management positions or jobs that usually require a university education. This finding is consistent with data from previous surveys and may be partly the result of inherent differences in the type of program completed.

By definition, Applied/Professional programs provide graduates with *occupation-specific* skills and training while Liberal Arts & Sciences programs provide graduates with generic skills that can be applied to a multitude of

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[112] The Strategic Counsel, under contract by the Commission, the Canadian Council on Learning (CCL) and the Council of Atlantic Ministers of Education and Training (CAMET), will release a report on this topic in late 2007.

jobs. Given these differences, it is reasonable to think that graduates of Applied/Professional programs were better equipped to find employment related to their 2003 degree because they had been exposed to specific career options as part of their program. For many, this exposure included work placements, which would have provided further employment exposure that could help with the job search after graduation. From a development perspective, programs designed to assist Liberal Arts & Sciences graduates in making links between their post-secondary education and potential applications to employment would assist graduates in making their transition from the "learning force" to the work force.

Graduates of Liberal Arts & Sciences programs, those working in the Maritime region or those whose occupation does not usually require a university education earned significantly less, on average, than their peers. However, there were no significant differences in the earnings of women and men or of graduates from different family educational backgrounds. That women and graduates with lower levels of parental educational attainment were as successful in their employment outcomes as those from the most highly educated families speaks to the role a university education plays as a social equalizer.

5.3 The Majority of Graduates Borrowed for their Education

Sixty percent of all graduates and 65% of first-degree holders borrowed to finance their 2003 degree. The most common source of financing was government student loans.

At graduation, the Class of 2003 borrowers accumulated an average debt of $23,000 to finance their education, approximately the same amount borrowed by the Class of 1999. That the average amount borrowed did not increase between cohorts may be the result of the implementation of the Canada Millennium Scholarship program, since over a third of graduates who borrowed from government, the most common borrowing source, received a Millennium Bursary. For Maritimers who receive a Millennium Bursary, the amount awarded is applied directly to the student loan to reduce the amount to be repaid. At graduation when the loans for each year are combined into total amount borrowed (and to be repaid), the value of Millennium Bursaries has already been removed; thus it is possible that graduates have under-reported their borrowing amounts.

Nevertheless, graduates continued to accumulate even more student loan debt as half of them returned to study and many borrowed to do so. By 2005, three quarters of first-degree holders (and 67% of all graduates) borrowed to finance their 2003 degree and/or further education, and they accumulated an average debt of over $27,000.

5.4 Many Graduates Accumulated Substantial Debt and Reported Experiencing Difficulty with Repayment

At graduation, over one third of borrowers had accumulated $30,000 or more in education-related debt, and by 2005 this proportion climbed to forty percent. With high debt comes high debt payments as repayment amounts are tied directly to the size of the loan. Indeed, for the Class of 2003 borrowers, significant differences were evident in the monthly repayment amount by borrowing range, with graduates who borrowed the most (i.e., $30,000 or more) making payments that were nearly five times greater than graduates who borrowed the least (i.e., $1-$6,999).

Research has shown that graduates devoting eight percent or more of their earnings to student loan payments experience difficulty meeting these repayment obligations. The data in Chapter 4 support the research findings as borrowers with a debt-to-earnings ratio above eight percent were significantly more likely than those below to have experienced difficulty with repayment. Looking at other benchmarks of manageable debt payment revealed that, even if the debt-to-earnings threshold were varied by annual income (for example, the maximum payment as a percentage of earnings was five percent for those earning between $10,001 and $20,000 but 10% for those earning between $20,001 and $30,000), approximately one-third of the Class of 2003 borrowers in repayment would exceed what current literature states to be "manageable."

In addition to high student loan amounts, a relative lack of knowledge about repayment assistance programs probably impairs graduates' ability to manage their debts. Among government borrowers, only 27% were aware of government repayment assistance programs; among graduates who reported difficulty repaying their loans, only 31% were aware of these programs. From a public policy perspective, more needs to be done to ensure that those graduates who need repayment assistance are aware of the options available to them.

5.5 Graduates from Low-Income Families are More Likely to Have Borrowed Heavily and to Face a Significant Financial Challenge in Repaying this Debt

Well-known predictors of university attendance include previous academic achievement, parental expectations and financial resources, factors that typically represent greater barriers for individuals from low-income families. Within the Class of 2003, 25% of all graduates, and 21% of first-degree holders, came from families with no prior post-secondary education (a standard proxy for low-income). While this group of graduates was successful in overcoming initial barriers to university education, this success did not come without a cost.

Chapter 4 shows that how graduates paid for their university education differed significantly by family educational background. Specifically, graduates with the lowest level of parental educational attainment were significantly less likely to rely on their parents as a main source of financing and were more likely to borrow and to borrow more.

At graduation, first-degree holders whose parents had no post-secondary training borrowed $7,000 more, and were significantly more likely to have borrowed in the $30,000+ range, than their counterparts from the most highly educated families. By 2005, the gap in borrowing widened to over $8,000, despite the fact that graduates from the least educated families were less likely to have pursued additional education.

Given differences in borrowing, those at an economic disadvantage entering their program continued to be at an economic disadvantage two years after graduation. Their higher level of borrowing means that graduates from the least educated families face significant financial burden upon completing their degree, since they must repay not only the principal but also the interest charged for borrowing. A student loan of $32,123 could mean an additional $17,763 in interest fees[113] over the life of the loan, and hence a total education-related debt of nearly $50,000.

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[113] Calculation based on five percent fixed interest rate with 114 monthly payments (using the National Student Loan Service Centre's Loan Repayment Calculator). For a loan of $23,945 (the average amount borrowed by first-degree holders with parental educational attainment of a Bachelor's degree above), interest fees would be $13,241 bringing total education-related debt to $37,186.

5.6 Graduates Were Highly Satisfied with their University Program and Experience

When asked to think about their 2003 degree, the graduates reported that they were highly satisfied with the education and the services they received, and reported high levels of skill development during their degree. Two years after graduation, most, if given the opportunity to do it all over again, would choose to go to university, and moreover, would choose the same institution and the same major field of study. And even though Liberal Arts & Sciences graduates were less likely to say that they would complete the same major field of study, still 75% of them would not change it if given the opportunity.

Although there was a significant difference between borrowers and non-borrowers in the proportion who felt their university education was worth the financial investment, the majority, whether or not they had borrowed, judged that their university experience was worth the personal and financial investments required.

These statistics confirm both the explicit and the intangible benefits of a university education, in that the majority of graduates - even those who returned for further study, those who borrowed in the highest ranges, and those who experienced difficulty with their student loan repayment - would, if given the opportunity, do it all over again.

Future direction:
In 2008, the MPHEC plans, pending funding, to again interview the graduates of the Class of 2003 to determine the nature of their transition from the "learning force" to the work force by the five-year mark and also to assess whether trends found two years after graduation continue over time. This time-series data will provide important information for: students, to help in their decision-making processes concerning the many choices to be made regarding post-secondary education; universities, to understand students' experiences during and following their university degree to inform program and institutional developments; and governments, to assist in the evaluation and design of policies pertaining to universities and their students/graduates.

APPENDIX 1 METHODOLOGICAL NOTES

Survey Methodology

Between September 21st and December 23rd 2005, MarketQuest Research completed computer-assisted telephone interviews with graduates from the sixteen public universities in the Maritime region. The sample was designed so that institutions were represented through a proportionately allocated sample, stratified by institution and major field of study within each institution, and was based on a fixed sample size of approximately 30% of all graduates. Due to the small size of the graduating class or a specific request, a census was attempted for Université Sainte-Anne, Atlantic School of Theology and the University of Prince Edward Island.

The following table shows the distribution of the final sample by province and institution.

Distribution by participating institutions for the Class of 2003 in 2005

	Population: all graduates Class of 2003		unweighted sample		weighted sample	
	n	(%)	n	(%)	n	(%)
Institution						
Acadia University	951	7,1	292	6,8	301	7,2
Atlantic School of Theology	19	0	8	0,2	6	0,1
Cape Breton University	584	4,3	184	4,3	156	3,7
Dalhousie University	3163	23,6	959	22,3	1002	23,9
Mount Allison University	483	3,6	151	3,5	153	3,6
Mount Saint Vincent University	974	7,3	297	6,9	308	7,3
Nova Scotia Agricultural College	164	1,2	53	1,2	25	0,6
Nova Scotia College of Art & Design University	217	1,6	62	1,4	69	1,6
Saint Mary's University	1191	8,9	355	8,2	378	9
St. Francis Xavier University	1100	8,2	337	7,8	349	8,3
St. Thomas University	430	3,2	164	3,8	136	3,2
Université de Moncton	1074	8	328	7,6	340	8,1
Université Sainte-Anne	48	0,4	24	0,6	15	0,4
University of King's College	183	1,4	54	1,3	58	1,4
University of New Brunswick	2233	16,6	729	16,9	707	16,8
University of Prince Edward Island	616	4,6	313	7,2	196	4,7
Total	**13 430**	**100**	**4310**	**100**	**4200**	**100**

Note: weighted data are rounded and exclude 52 cases where respondents had completed a college-level program (29 at CBU and 23 at NSAC)

The survey questionnaire was pre-tested to ensure respondents did not experience problems with any of the questions, and to verify that the questionnaire script worked in the intended manner (i.e., skip patterns).

The questionnaire response rate for valid contact numbers was 61%.

Statistical Analyses

The margin of error for findings from the weighted sample of 4,200 graduates is ± 1.5 percentage points, 19 times out of 20. In all cases, the confidence level determining significance was set at 95%. All statistics presented have been generated from weighted data; data were weighted by institution and field of study within each institution to adjust to proportional representation in the population.

Ordinal/Categorical Data: Differences in proportions were tested using Chi-Square (SPSS version 14.0). Notable differences were detected using adjusted standardized residuals.

Ratio/Continuous Data: Main effects were tested using one-way ANOVA (SPSS version 14.0). Differences between groups were tested using the Student-Neuman-Keuls test.

Analysis by parental educational attainment (a proxy for family income)

For analytical purposes, examination of the impact that parental educational attainment has on university experience and/or outcomes focuses on those in the lowest parental educational attainment category (a proxy for low-income). Comparisons between groups concentrate on those in the lowest and highest levels of parental educational attainment so as to compare graduates whose parents have no post-secondary training at all with graduates who have at least one parent with a Bachelor's degree or above (a proxy for high-income).

To get a sense of the extent to which changes in the general population could be influencing changes in the distribution of graduates by parental educational attainment across cohorts, we calculated a ratio to estimate the representation of family educational background within the cohorts compared to the general population. Relying on Census data, we used father's (men aged 45 to 64; this is the age range most likely to capture most graduates' fathers) level of education as the proxy for parental educational attainment in the approximate year graduates would have completed their program (Class of 1996 = Census 1996; Class of 2003 = Census 2001). The ratio of educational attainment of a high school diploma or less, in the sample compared to the general population, decreased from 0.96 to 0.93 among the Class as a whole, and 0.89 to 0.84 among first-degree holders only.

Analysis using scale variables

In some cases, graduates provided their assessment of a situation or experience on either a four-point or five-point scale. Where a four-point scale was used responses in the top two and bottom two categories were combined to create a dichotomous variable for analytical purposes. For example, graduates were asked to indicate whether they were very satisfied, satisfied, dissatisfied or very dissatisfied with the services offered at their university. In this case, satisfied and very satisfied were grouped into one category and dissatisfied and very dissatisfied were grouped into another. Questions on development of skills during the 2003 degree also adhere to this structure.

In cases where a five-point scale was used, the top two and bottom two responses were also combined, with the middle value representing a category on its own (i.e., "neutral"). For basic frequencies for the Class as a whole (or first-degree holders as a whole) the neutral category was included in the percentage calculation; however, when comparisons were made between groups (i.e., by gender, family educational background, etc.) "neutral" responses were excluded from analysis. For example, respondents were asked to indicate whether, if given the opportunity to do it all over again, they would choose to go to university based on a scale of one to

five where one means "definitely choose NOT to go to university" and five means "definitely choose TO go to university." For this analysis, scores one and two were combined to indicate "would not do it all over again" and four and five were combined to indicate "would do it again"; respondents who answered "three" on the five-point scale were excluded when making comparisons between groups. In addition to the above question, graduates' assessment of the personal and financial investment required for their university education adheres to this structure.

Wage-related data and analysis

Graduates reported earnings on the basis of their choosing (hourly, weekly, annually, etc.); all responses were then converted to weekly amounts and the weekly earnings variable was used to derive annual and hourly earnings for all employed graduates. To limit the effect of outliers, the lowest and highest five percent of earnings were excluded from analysis. This "trimmed" variable was used in all wage-related analyses and in deriving the annual and hourly wage variables.

Student loan data

Between 2001 and 2005, the questionnaire used to survey Maritime university graduates was modified to enhance the accuracy of student loan data. While many questions remain the same between cohorts, some were modified and several new ones were added. The most important change was a restructuring to the student loan questions. Specifically, Class of 1999 in 2001 respondents were asked about their experiences with each loan source by program taken; whereas Class of 2003 in 2005 respondents were asked about their entire student loan experience for each loan source. This change resulted in the opportunity for respondents to comment on consolidation of loans where applicable (for the first degree and post-2003 studies) which was not an option in the 1999 questionnaire. This change should be kept in mind when considering comparisons between cohorts.

To view a copy of the questionnaires used for each survey visit: www.mphec.ca.

Analysis of borrowing and owing amounts

To ensure a consistent base, within the Class and across cohorts, graduates who borrowed to finance their university program (the 1999 or 2003 degree, additional education and/or both) but who did not know or did not report how much they had borrowed from each loan source were excluded from analysis. Similarly, graduates who did not know or did not report the amount outstanding on each loan were excluded, and in this case only those graduates included in the calculation of total amount borrowed were included in the calculation of total amount owing.

APPENDIX 2 PROGRAM ORIENTATION – LIST OF MAJORS

Liberal Arts & Sciences

00009 Science-General or undeclared major
00010 Science and Business Administration
00025 Interdisciplinary
00003 Arts-General or undeclared major
20399 Other Fine Arts
20504 Composition
20506 Organ
20507 Piano
20509 Singing, Opera Singing
20511 Jazz Studies
20512 Music Performance
20599 Other Music
20802 Drama, Theatre
20803 Costume Studies
21403 Drawing and Design
21404 Graphic arts
21406 Photography
21408 Printing
21409 Ceramics
21413 Painting
21414 Sculpture
21416 Studio
21418 Communication Design
21499 Other Applied Visual Arts
30304 Classics
30599 Other English Language and/or Literature
30600 French Language and/or Literature
30999 History-Other
31105 German
31106 Spanish
31107 Russian
31400 Linguistics
31799 Other Mass Communications Studies
32199 Philosophy- Other
32400 Religious Studies
32501 Pastoral Theology
40300 Anthropology
40600 Archaeology
40801 Native Canadian Studies
40899 Canadian Studies - Other
40920 Asian Studies
40950 Celtic Studies
40977 Contemporary Studies
40981 International Development Studies
42701 Agricultural Economics
42799 Economics-Other
43000 Geography
44012 Environmental Design Studies
44030 Environmental Studies and Law
44099 Man-Environment Studies-Other
44300 Political Science
44400 Child Study
44608 Neuroscience
44610 Biology-Psychology
44699 Psychology-Other
45200 Sociology
45202 Sociology and Anthropology
46100 Womens Studies
46900 Community Studies
46930 Integrative Science
50310 Animal Science
50322 Plant Science
50324 Agribiology: Environmental
50326 Soil Science
50332 Food Science
50333 Agricultural Mechanization
50340 Aquaculture
50350 Agricultural Business
50699 Biochemistry
50912 Microbiology
50913 Biology-Chemistry
50920 Environmental Biology
50930 Environmental Science
50999 Other biology
51500 Botany
51808 Food & Nutrition
51825 Family Studies
51899 Other household sciences and related
52200 Veterinary Sciences
52401 Fisheries
52407 Marine Biology
81212 Mathematical Science
81299 Other Mathematics
81501 Analytical Chemistry
81599 Chemistry-Other
81820 Environmental Geochemistry
81899 Geology-Other
82799 Other Oceanography and water studies
83001 Astrophysics and Astronomy
83099 Other physics

Applied/Professional

11800 Elementary-Secondary Teacher Training
11801 Art Education
11804 Special Education
11805 Home Economics Education
11806 Industrial Arts-Teaching
11807 Music Education
11809 IT Education
11812 Adult, Continuing Extension Education
11813 Reading
11816 Elementary Education
11818 Elementary Education-French
11819 Elementary Education-Social Studies
11820 Secondary Education-General
11821 Secondary Education-English
11822 Secondary Education-French
11823 Secondary Education-History
11824 Secondary Education–Mathematics and Science
11837 Teaching French as a Second Language
11899 Other Elementary-Secondary Teacher Training
13600 Kindergarten, Pre-School Teacher Training
13700 Education-General
13701 Bachelor of Arts, Bachelor of Education
13702 Bachelor of Science-Bachelor of Education
13801 School librarianship
13802 Educational Administration
13803 Educational Psychology
13805 Guidance and Counselling
13806 Curriculum Specialization
13808 Education Foundations
13811 Educational Media
13813 Individual and Family Studies
13816 Elementary Ed
13900 Physical Education
14000 Kinesiology, human kinetics and kinanthropology
14100 Recreation
14102 Recreation Management
31099 Journalism-Languages and/or Literatures, Other
31200 Library Sciences
31701 Public Relations Management
32599 Theological Studies
41202 Accounting
41204 Finance
41206 Industrial Relations and Personnel Management
41207 Entrepreneurship
41208 Technology Management and Entrepreneurship
41210 Marketing-Retailing
41216 Management
41218 Information Management
41222 International Business
41230 Human Resources Management
41240 Business Administration-Law
41246 Electronic Commerce
41255 Financial Services
41299 Commerce, Management, Business Administration, Administrative
41300 Criminology
41401 Public Administration
41402 Health Administration
41406 Hospitality-Tourism
41416 Marine Management
43300 Law and Jurisprudence
44700 Secretarial Science
44703 Information Technologies-Computer Studies
44999 Social work and social welfare-Other
45900 Gerontology
47100 Cooperative Systems
51810 Dietetics
52100 Veterinary Medicine
60300 Architecture
60304 Interior Design
60600 Chemical Engineering
60700 Civil Engineering
60900 Electrical Engineering
60902 Computer Engineering
61000 Industrial Engineering
61100 Mining Engineering
61200 Mechanical Engineering
61300 Metallurgical Engineering
61401 Biomedical Engineering
61406 Geological Engineering
61414 Agricultural-Biological Engineering
61416 Surveying Engineering
61600 Engineering General
62020 Forest Engineering
62099 Forestry - Other
62440 Environmental Technology
62450 Environmental Health Technology
62470 Landscape Horticulture
70300 Dentistry
70500 Medicine
70626 Pharmacology
70628 Physiology
70630 Physiology and Biophysics
70699 Basic Medical Sciences
71001 Laboratory Medicine-Microbiology
71020 Pathology
71522 Nursing-Post RN
71599 Nursing-Other
72100 Pharmacy
72400 Epidemiology and Public Health
72703 Human Communication Disorders
72704 Occupational Therapy
72706 Physiotherapy
73800 Dental Hygiene
79900 Other health professions and occupations
80606 Computer Science-Applied
80610 Computer Science & Bus.Admin
80631 Multimedia
80640 Information Management
80642 Computer System Development
80643 Geographical Information Systems
80650 Information Technology
80699 Computer Science
80770 Software Development

APPENDIX 3 LOGISTIC REGRESSION: POST-2003 EDUCATION

Logistic regression model: effect of program orientation, parental educational attainment and incidence of borrowing for the 2003 degree on pursuing further study.

Variable	Variable Descriptions
famed_LL	Parental educational attainment 0 = less than Bachelor's degree; 1 = Bachelor's degree or above
progor_LL	Program orientation of the 2003 degree 0 = Applied/Professional; 1 = Liberal Arts & Sciences
none_borrow	Incidence of borrowing for the 2003 degree 0 = did not borrow for the 2003 degree; 1 = borrowed for the 2003 degree
post_ed	Did the graduate pursue further studies after graduation? 0 = no; 1 = yes

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	2733.131[a]	0.126	0.168

[a] Estimation terminated at iteration number 4 because parameter estimates changed by less than 0.001.

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	296.005	3	0.000
	Block	296.005	3	0.000
	Model	296.005	3	0.000

Variable	B	S.E.	Wald	df	Sig.	Exp(B)
famed_LL	0.204	0.094	4.714	1	0.030	1.226
progor_LL	1.443	0.092	245.155	1	0.000	4.235
none_borrow	-0.395	0.097	16.482	1	0.000	0.674
Constant	-0.421	0.103	16.598	1	0.000	0.656

Variable(s) entered on step 1: famed_LL, progor_LL, none_borrow.

APPENDIX 4 OCCUPATIONAL SKILL LEVEL: NATIONAL OCCUPATIONAL CLASSIFICATION (NOC) CODES

The occupational skill level variable is created from the National Occupation Classification (NOC) code structure which classifies occupations according to their combination of skill level and skill type. Skill type reflects the field of training or experience usually required and the type of work performed; there are 10 skill types. The skill types are:

0 - Management Occupations (*note - management occupations are not assigned to a skill level category)
1 - Business, Finance and Administrative Occupations
2 - Natural and Applied Sciences and Related Occupations
3 - Health Occupations
4 - Occupations in Social Science, Education, Government Service and Religion
5 - Occupations in Art., Culture, Recreation and Sport
6 - Sales and Service Occupations
7 - Trades, Transport, and Equipment Operators and Related Occupations
8 - Occupations Unique to Primary Industry
9 - Occupations Unique to Processing, Manufacturing and Utilities.

Skill level corresponds to the type and/or amount of training or education typically required. The skill levels are:

A - University education
B - College level education including trade apprenticeships
C - Secondary school plus a period of job-specific training
D - Short work demonstration (no formal education required).

Job Skill Level Categories:

Usually requires university education or is a management position = skill type 0 + skill level A

Occupation does not require university education = skill level B, C and D

Appendix 5 Occupation Coding Scheme (Derived from Statistics Canada's National Occupational Classification coding scheme)

Financial/Accounting

1111.00 Financial Auditors and Accountants
1112.00 Financial and Investment Analysts
1113.00 Securities Agents, Investment Dealers and Brokers
1114.00 Other Financial Officers
1231.00 Bookkeepers
1232.00 Loan Officers

Administrative/Clerical

1221.00 Administrative Officers
1222.00 Executive Assistants
1236.00 Customs, Ship and Other Brokers
1241.00 Secretaries (Except Legal and Medical)
1242.00 Legal Secretaries
1243.00 Medical Secretaries
1244.00 Court Recorders and Medical Transcriptionists
1411.00 General Office Clerks
1413.00 Records Management and Filing Clerks
1414.00 Receptionists and Switchboard Operators
1422.00 Data Entry Clerks
1424.00 Telephone Operators
1431.00 Accounting and Related Clerks
1432.00 Payroll Clerks
1433.00 Customer Service Representatives - Financial Services
1434.00 Banking, Insurance and Other Financial Clerks
1441.00 Administrative Clerks
1442.00 Personnel Clerks
1443.00 Court Clerks
1451.00 Library Clerks
1452.00 Correspondence, Publication and Related Clerks
1453.00 Customer Service, Information and Related Clerks
1454.00 Survey Interviewers and Statistical Clerks
1471.00 Shippers and Receivers
1473.00 Production Clerks
1474.00 Purchasing and Inventory Clerks
1475.00 Dispatchers and Radio Operators
1476.00 Transportation Route & Crew Schedulers

Occupations in Art, Culture, Recreation and Sport

5111.00 Librarians
5112.00 Conservators and Curators
5113.00 Archivists
5121.00 Authors and Writers
5122.00 Editors
5123.00 Journalists
5124.00 Professional Occupations in Public Relations and Communications
5125.00 Translators, Terminologists and Interpreters
5131.00 Producers, Directors, Choreographers and Related Occupations
5132.00 Conductors, Composers and Arrangers
5133.00 Musicians and Singers
5134.00 Dancers
5136.00 Painters, Sculptors and Other Visual Artists
5211.00 Library and Archive Technicians and Assistants
5212.00 Technical Occupations Related to Museums and Art Galleries
5221.00 Photographers
5225.00 Audio and Video Recording Technicians
5226.00 Other Technical and Co-ordinating Occupations in Motion Pictures, Broadcasting & the Performing Arts
5231.00 Announcers and Other Broadcasters
5241.00 Graphic Designers and Illustrators
5243.00 Theatre, Fashion, Exhibit and Other Creative Designers
5244.00 Artisans and Craftpersons
5251.00 Athletes
5252.00 Coaches
5253.00 Sports Officials and Referees
5254.00 Program Leaders and Instructors in Recreation, Sport and Fitness

Physical and Life Sciences

2112.00 Chemists
2113.00 Geologists, Geochemists and Geophysicists
2114.00 Meteorologists
2115.00 Other Professional Occupations in Physical Sciences
2121.00 Biologists and Related Scientists
2122.00 Forestry Professionals
2123.00 Agricultural Representatives, Consultants and Specialists

Engineers

2131.00 Civil Engineers
2132.00 Mechanical Engineers
2133.00 Electrical and Electronics Engineers
2134.00 Chemical Engineers
2141.00 Industrial and Manufacturing Engineers
2142.00 Metallurgical and Materials Engineers
2143.00 Mining Engineers
2144.00 Geological Engineers
2145.00 Petroleum Engineers
2147.00 Computer Engineers (Except Software Engineers)
2148.00 Other Professional Engineers, n.e.c.

Computer-Related/IT

2171.00 Information Systems Analysts and Consultants

2172.00 Database Analysts and Data Administrators
2173.00 Software Engineers & Designers
2174.00 Computer Programmers and Interactive Media Developers
2175.00 Web Designers and Developers
2281.00 Computer and Network Operators and Web Technicians
2282.00 User Support Technicians

Managers

12.00 Senior Government Managers and Officials
13.00 Senior Managers - Financial, Communications and Other Business Services
14.00 Senior Managers - Health, Education, Social and Community Services & Membership Organizations
15.00 Senior Managers - Trade, Broadcasting and Other Services, n.e.c.
16.00 Senior Managers - Goods Production, Utilities, Transportation and Construction
111.00 Financial Managers
112.00 Human Resources Managers
113.00 Purchasing Managers
114.00 Other Administrative Services Managers
121.00 Insurance, Real Estate and Financial Brokerage Managers
122.00 Banking, Credit and other Investment Managers
123.00 Other Business Services Managers
131.00 Telecommunication Carriers Managers
211.00 Engineering Managers
212.00 Architecture and Science Managers
213.00 Computer and Information Systems Managers
311.00 Managers in Health Care
312.00 Administrators - Post-Secondary Education and Vocational
313.00 School Principals and Administrators of Elementary and Secondary Education
314.00 Managers in Social, Community and Correctional Services
411.00 Government Managers - Health and Social Policy Development and Program Administration
412.00 Government Managers - Economic Analysis, Policy Development and Program Administration
413.00 Government Managers - Education Policy Development and Program Administration
511.00 Library, Archive, Museum and Art Gallery Managers
512.00 Managers - Publishing, Motion Pictures, Broadcasting and Performing Arts
513.00 Recreation and Sports Program and Service Directors
611.00 Sales, Marketing and Advertising Managers
621.00 Retail Trade Managers
631.00 Restaurant and Food Service Managers
632.00 Accommodation Service Managers
643.00 Commissioned Officers, Armed Forces
651.00 Other Services Managers
711.00 Construction Managers
712.00 Residential Home Builders and Renovators
713.00 Transportation Managers
721.00 Facility Operation and Maintenance Managers
811.00 Primary Production Managers (Except Agriculture)
911.00 Manufacturing Managers
912.00 Utilities Managers

Technical Occupations in Natural and Applied Sciences

2211.00 Chemical Technologists and Technicians
2221.00 Biological Technologists and Technicians
2222.00 Agricultural and Fish Products Inspectors
2223.00 Forestry Technologists and Technicians
2224.00 Conservation and Fishery Officers
2225.00 Landscape and Horticultural Technicians and Specialists
2231.00 Civil Engineering Technologists and Technicians
2232.00 Civil Engineering Technologists and Technicians
2233.00 Industrial Engineering and Manufacturing Technologists and T
2234.00 Construction Estimators
2242.00 Electronic Service Technicians (Household and Business Equipment)
2251.00 Architectural Technologists and Technicians
2252.00 Industrial Designers
2255.00 Mapping and Related Technologists and Technicians
2263.00 Inspectors in Public and Environmental Health and Occupational Health & Safety
2271.00 Air Pilots, Flight Engineers and Flying Instructors

Health Professionals (not Nurses)

3111.00 Specialist Physicians
3112.00 General Practitioners and Family Physicians
3113.00 Dentists
3114.00 Veterinarians
3123.00 Other Professional Occupations in Health Diagnosing and Treating
3131.00 Pharmacists
3132.00 Dietitians and Nutritionists
3141.00 Audiologists and Speech-Language Pathologists
3142.00 Physiotherapists
3143.00 Occupational Therapists

Nurses

3151.00 Head Nurses and Supervisors
3152.00 Registered Nurses

Technical Occupations in Health

3144.00 Other Professional Occupations in Therapy and Assessment
3212.00 Medical Laboratory Technicians
3213.00 Veterinary and Animal Health Technologists and Technicians
3214.00 Respiratory Therapists, Clinical Perfusionists and Cardio-Pulmonary Technologists
3215.00 Medical Radiation Technologists
3219.00 Other Medical Technologists and Technicians (Except Dental Health)
3222.00 Dental Hygienists and Dental Therapists
3232.00 Midwives and Practitioners of Natural Healing
3233.00 Licensed Practical Nurses
3234.00 Ambulance Attendants and Other Paramedical Occupations

3235.00 Other Technical Occupations in Therapy and Assessment
3411.00 Dental Assistants
3413.00 Nurse Aides, Orderlies and Patient Service Associates
3414.00 Other Assisting Occupations in Support of Health Services

PSE Professors/Instructors/TA or RA

4121.00 University Professors
4122.00 Post-Secondary Teaching and Research Assistants
4131.00 College and Other Vocational Instructors

Teachers K-12

4141.00 Secondary School Teachers
4142.00 Elementary School and Kindergarten Teachers
4143.00 Educational Counsellors

Psychologists/Social Workers/Counsellors

4151.00 Psychologists
4152.00 Social Workers
4153.00 Family, Marriage and Other Related Counsellors
4212.00 Community and Social Service Workers

Policy Researchers, Program Officers, Consultants

4161.00 Natural and Applied Science Policy Researchers, Consultants & Program Officers
4162.00 Economists and Economic Policy Researchers and Analysts
4163.00 Business Development Officers and Marketing Researchers and Consultants
4164.00 Social Policy Researchers, Consultants and Program Officers
4165.00 Health Policy Researchers, Consultants and Program Officers
4166.00 Education Policy Researchers, Consultants and Program Officers
4167.00 Recreation, Sports and Fitness Program Supervisors and Consultants
4168.00 Program Officers Unique to Government
4169.00 Other Professional Occupations in Social Science, n.e.c.

Bartenders, Food and Beverage Servers

6452.00 Bartenders
6453.00 Food and Beverage Servers

Retail Salespersons & Supervisors

6211.00 Retail Trade Supervisors
6421.00 Retail Salespersons and Sales Clerks

Other

1211.00 Supervisors, General Office and Administrative Support Clerk
1212.00 Supervisors, Finance and Insurance Clerks
1213.00 Supervisors, Library, Correspondence and Related Information
1224.00 Property Administrators
1225.00 Purchasing Agents and Officers
1226.00 Conference and Event Planners
1228.00 Immigration, Employment Insurance and Revenue Officers
1233.00 Insurance Adjusters and Claims Examiners
1234.00 Insurance Underwriters
1235.00 Assessors, Valuators and Appraisers
2151.00 Architects
2153.00 Urban and Land Use Planners
2154.00 Land Surveyors
2161.00 Mathematicians, Statisticians and Actuaries
2273.00 Deck Officers, Water Transport
4154.00 Ministers of Religion
4214.00 Early Childhood Educators and Assistants
4215.00 Instructors and Teachers of Persons with Disabilities
4216.00 Other Instructors
4217.00 Other Religious Occupations
6212.00 Food Service Supervisors
6216.00 Other Service Supervisors
6231.00 Insurance Agents and Brokers
6232.00 Real Estate Agents and Salespersons
6233.00 Retail and Wholesale Buyers
6241.00 Chefs
6242.00 Cooks
6431.00 Travel Counsellors
6432.00 Pursers and Flight Attendants
6433.00 Airline Sales and Service Agents
6434.00 Ticket Agents, Cargo Service Representatives and Related Cle
6435.00 Hotel Front Desk Clerks
6441.00 Tour and Travel Guides
6443.00 Casino Occupations
6451.00 Maîtres d'hôtel and Hosts/Hostesses
6471.00 Visiting Homemakers, Housekeepers and Related Occupations
6472.00 Elementary and Secondary School Teacher Assistants
6474.00 Babysitters, Nannies and Parents' Helpers
6481.00 Image, Social and Other Personal Consultants
6482.00 Estheticians, Electrologists and Related Occupations
6483.00 Pet Groomers and Animal Care Workers
6611.00 Cashiers
6621.00 Service Station Attendants
6622.00 Grocery Clerks and Store Shelf Stockers
6641.00 Food Counter Attendants, Kitchen Helpers and Related
6651.00 Security Guards and Related Occupations
6661.00 Light Duty Cleaners
6663.00 Janitors, Caretakers and Building Superintendents
6671.00 Operators and Attendants in Amusement, Recreation and Sport
6683.00 Other Elemental Service Occupations

7211.00 Supervisors, Machinists and Related Occupations
7212.00 Contractors and Supervisors, Electrical Trades and Telecommunications Occupations
7217.00 Contractors and Supervisors, Heavy Construction Equipment Crews
7241.00 Electricians (Except Industrial and Power System)
7242.00 Industrial Electricians
7246.00 Telecommunications Installation and Repair Workers
7265.00 Welders and Related Machine Operators
7271.00 Carpenters
7294.00 Painters and Decorators
7311.00 Construction Millwrights and Industrial Mechanics (Except Textile)
7315.00 Aircraft Mechanics and Aircraft Inspectors
7317.00 Textile Machinery Mechanics and Repairers
7342.00 Tailors, Dressmakers, Furriers and Milliners
7344.00 Jewellers, Watch Repairers and Related Occupations
7414.00 Delivery and Courier Service Drivers
7441.00 Residential and Commercial Installers and Servicers
7445.00 Other Repairers and Servicers
7452.00 Material Handlers
7611.00 Construction Trades Helpers and Labourers
8241.00 Logging Machinery Operators
8251.00 Farmers and Farm Managers
8252.00 Agricultural and Related Service Contractors and Managers
8253.00 Farm Supervisors and Specialized Livestock Workers
8256.00 Supervisors, Landscape and Horticulture
8257.00 Aquaculture Operators and Managers
8262.00 Fishing Vessel Skippers and Fishermen/women
8431.00 General Farm Workers
8616.00 Logging and Forestry Labourers
9213.00 Supervisors, Food, Beverage and Tobacco Processing
9222.00 Supervisors, Electronics Manufacturing
9414.00 Concrete, Clay and Stone Forming Operators
9415.00 Inspectors and Testers, Mineral and Metal Processing
9422.00 Plastics Processing Machine Operators
9423.00 Rubber Processing Machine Operators and Related Workers
9424.00 Water and Waste Plant Operators
9463.00 Fish Plant Workers
9465.00 Testers and Graders, Food and Beverage Processing
9611.00 Labourers in Mineral and Metal Processing
9614.00 Labourers in Wood, Pulp and Paper Processing
9615.00 Labourers in Rubber and Plastic Products Manufacturing
9617.00 Labourers in Food, Beverage and Tobacco Processing
9618.00 Labourers in Fish Processing
9619.00 Other Labourers in Processing, Manufacturing and Utilities

Other - Judicial and Protective Services

1227.00 Court Officers and Justices of the Peace
4112.00 Lawyers and Quebec Notaries
4155.00 Probation and Parole Officers and Related Occupations
4211.00 Paralegal and Related Occupations
6261.00 Police Officers (Except Commissioned)
6262.00 Firefighters
6461.00 Sheriffs and Bailiffs
6462.00 Correctional Service Officers
6464.00 Occupations Unique to the Armed Forces
6465.00 Other Protective Service Occupations

Other - HR Personnel

1121.00 Specialists in Human Resources
1122.00 Professional Occupations in Business Services to Management
1223.00 Personnel and Recruitment Officers
4213.00 Employment Counsellors

Other - Sales

6221.00 Technical Sales Specialists - Wholesale Trade
6411.00 Sales Representatives - Wholesale Trade (Non-Technical)
6623.00 Other Elemental Sales Occupations